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ANTIRRHINUM.



FEBRUARY, 1884.

THE GREAT FALL OF SNOW during the present winter over the whole country, and over nearly the whole of North America, makes it probable that we may have conditions the coming spring similar to those of last year, that gave us a late season for all garden and farm work. These conditions were principally a low temperature and a wet soil. Then we received the water mostly as rain, and after the frosts had left us; now the snow is distributed very evenly upon the face of the whole land in large amount. In melting it will make a great volume of water, and we shall indeed be fortunate if this takes place so slowly and gradually as to cause no disastrous floods. A low temperature must of necessity rule while the excessive evaporation prevails, since this is general and not local. It follows almost certainly that low-lying, undrained lands will not be ready for tillage until late in the spring, and also that the crops on such lands will be late in maturing and less than average in amount. A late crop for the market gardener is of inferior value, and the profit on the early Peas, Potatoes and other vegetables will be greatly reduced. The remedy in this case lies in drainage. Well drained land gives the gardener a most decided advantage, for being dry it can be planted much earlier, and as it is at the same time much warmer, seeds

will germinate quickly and plants grow rapidly in it. A few days time with many garden crops greatly enhances their value, and possibly doubles the profit from them many times. The subject of drainage to the gardener and the fruit grower is of the first importance. By drainage is meant, not merely surface draining, but a means of quickly passing off the water from the soil to a depth of at least three feet, such as is afforded by efficient under-drains. Under-draining is receiving more attention from our cultivators now than ever before, yet only few comparatively realize its great value. An unusually wet season, like the last one, and as the coming one possibly may be, forces this subject upon our attention and demands consideration. Let those cultivators, wherever they may be, who experienced difficulty, last spring, in getting in their crops, and who thought a dryer soil would be an advantage, try an experiment by under-draining at least a small area, such as an acre or two, and learn thereby how great is the improvement. The full benefits of under-drainage can be experienced only in connection with deep tillage. With a sufficiently dry, and consequently warm, soil, deep cultivation, and a full supply of manure, we can uniformly raise large crops, and at the least expense. Healthy, rapid-growing, vigorous plants resist insect at-

tacks with great force and enables us to repel them with comparative ease. The farmer cannot afford, year after year, to skim over his acres as the weather may permit, and give no heed to an operation so important as under-draining; much less can the gardener and fruit grower, whose crops require so much more labor, and thereby are so much more valuable.

ANTIRRHINUM.

The Snapdragon is a flower that pleases every body; its curious and graceful form and bright colors fix our admiration. In these respects it is scarcely inferior to some of the showy Orchids. The plant is a native of middle and southern Europe, and in its original state the flowers are a pinkish purple with a yellowish-white throat. A long course of cultivation, and selection, and cross-fertilization have resulted in flowers of a great variety of colors and markings; some of these are of wonderful brilliancy, while others are soft and pleasingly shaded, and still others have a rich, velvety appearance.

The name, *Antirrhinum*, means like a snout, corresponding nearly to the significance of the common name, Snapdragon. By pressing on the sides of the flower the lips will open, and this circumstance has given rise to its name.

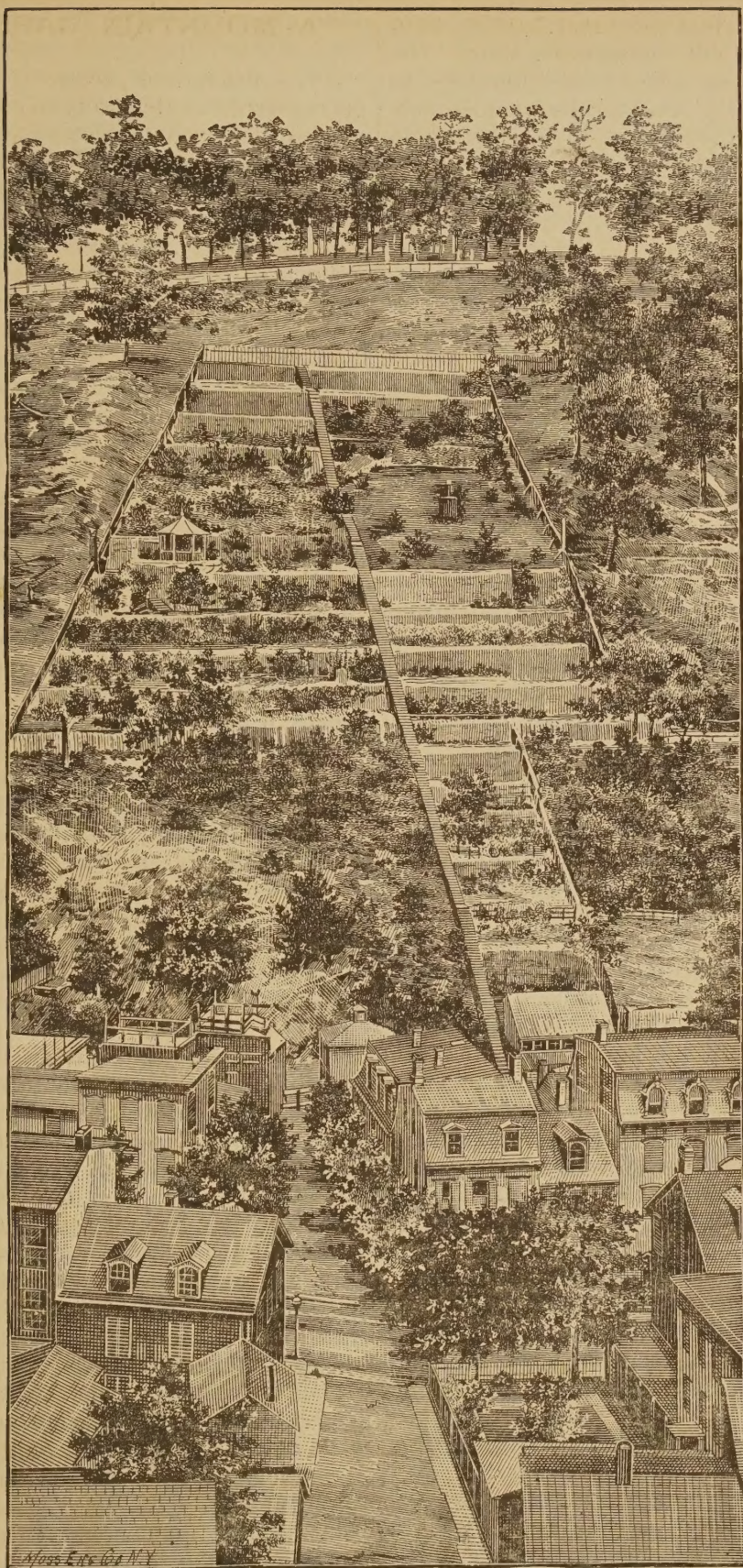
Our readers are of course more or less acquainted with this plant, still we think it has less attention than its merits entitle it to, and it is less frequently found in our gardens than it should be. It is a biennial plant and if it were not for the frost it would be usually known as such; but as it is tender it usually perishes in our gardens at the coming of winter. It is easily raised from seeds, and a good plan is to sow them in July in a cold-frame, prick out the young plants, and encourage their growth during autumn, then protect them through winter with leaves in the frame, and mats on the outside, giving air on mild days. In spring as soon as frost is past they can be planted out. However, where the winters are long it is quite as well to sow the seeds early, say any time this month or next, and get strong plants in time for planting out. They need a well-drained warm spot, doing well even in poor soils. Plants from seed sown in the ground will bloom late.

A MOUNTAIN GARDEN.

It is a pleasure to present to our readers, as we do at this time, an example of gardening which indicates so strongly the horticultural taste in its proprietors. It is a worthy specimen of gardening under difficulties. The engraving here given has been prepared from a photograph, and represents the garden of WM. G. FREYMAN, attorney at law, of Mauch Chunk, Pennsylvania.

As may be seen, it is constructed upon the side of a steep mountain. Mauch Chunk, which is the shiretown of Carbon County, Pa., is romantically situated in a deep gorge between two high mountains, and contains but one street, except for a short distance. The town is situated on the west bank of the Lehigh river, and in the valley of a creek that runs between the Mahoning and the Sharp mountains, in a very contracted place. The hills on each side rise precipitately to the height of several hundred feet, and not far back attain an elevation of more than a thousand feet above the river. The houses along the street extend to the base of both mountains, consequently ground is very scarce, and gardens a rarity. Mr. FREYMAN has utilized the mountain side to very good advantage, and has now a very productive garden on what was a few years ago a barren, cheerless waste.

About five years since he purchased a portion of the mountain side behind and above his residence, and commenced to terrace it. For some distance the beds are about thirty feet wide, and then they enlarge in both directions to a width of about one hundred and fifty feet. The walls of the terrace are constructed of a brown stone found on the ground, and are from six to twelve feet high. At the foot of many of these walls Grape vines are planted, the walls furnishing a firm support for the trellises. There are twenty-two of these terraces, and they are connected by a flight of stairs three hundred and fifty-three in number. The height of the upper terrace above the street is about two hundred feet, and at an elevation of about one hundred and fifty feet an arbor is located, which commands a fine view of the town in both directions. A portion of the terraces are devoted to flowers and fruit and ornamental trees, while the balance are used



Moss & Co. N.Y.

as a vegetable garden. The entire garden has a southern exposure, and is very productive, both in vegetables and fruits. Mr. FREYMAN has met with great success in the cultivation of Plums, Peaches, Apples, Grapes and Strawberries, and all other small fruits. This is probably the only garden of its kind in the country. Constructed as it is on the side of a very steep mountain, it is an object of curiosity to strangers visiting the town for the first time. Just behind the fence at the top runs the famous "Switch Back," which attracts thousands of people annually. The picture shows that the hill is steep, but it is much steeper than it appears, as the view was taken from a point high up on the opposite mountain. The greenhouse, which will be noticed behind the residence, stands upon the third terrace.

When gardening is undertaken and conducted under difficulties as great as those presented in this case, there must be an intense and controlling desire for the pursuit, and consequently its achievement is correspondingly pleasurable.

WIND SCREENS.

The advantage of trees as wind screens has been experienced by everybody, but strangely enough they have not been generally employed for this purpose, and for different reasons. Perhaps the strongest one is that it has not been the custom, and there are others that need not be here mentioned. The fact is, that comparatively few have given practical attention to the subject—more at the west than elsewhere. The present winter, with its blizzards, the mercury at zero and below, from twenty to forty degrees, and a strong wind blowing at the time, has emphasized the necessity for wind screens. Most of us are probably quite willing to recognize their value. We want these screens for our dwellings, and especially where they stand isolated in the country and in little villages. They are not less needed about stables and cattle sheds. It is time that there should be a general awakening on the subject, and screen planting be commenced energetically. Does any country dweller, who has ever put himself to the leeward of the orchard, or a grove, when a cold wind has been blowing, doubt that with a good wind screen to his house he

could materially reduce his yearly bill of fuel? Do not the dumb animals huddled behind a straw-stack speak with a silent eloquence that appeals to our humanity for aid and protection from the bitter wintry blasts? Who can doubt that good wind screens on his premises will benefit both his person and his pocket? There is no necessity for experiment in this matter, for we have passed beyond that stage; we know what to do and how.

Now is the time for all in exposed situations to plan for a wind screen to be planted next spring. Evergreens are best adapted to this purpose, and the most thoroughly reliable ones are the Norway Spruce, the Austrian Pine, the Scotch Pine, and the American Arbor Vitæ. These trees have been tested and proved valuable in all the Eastern, Middle, Western and Northwestern States. They are raised in large quantities, and when small can be bought at low prices.

The Norway Spruce and the Arbor Vitæ will produce handsome, smooth screens if planted in line at three to six feet apart and when but little room can be appropriated for the purpose, this will be found a desirable method of forming the wind break. In certain situations the continuously smooth screen has a handsome appearance, but if generally adopted to shelter dwellings, it would appear too formal. Its place more properly is about the stables and stock-yards.

For protection to dwellings the trees should be planted in grove style, at distances of twelve to eighteen feet, with occasionally a deciduous tree among them to break the sky outline. The nearest trees may be about fifty feet from the house, and the group not less than a hundred and fifty feet in width. It should be more or less irregular in outline, and extend through those quarters whence come the prevailing winds, and in most places these are the northwest, west and southwest. A planting of this kind will be exceedingly ornamental and useful.

The best way to procure the plants is to purchase them of nurserymen, and to get those that are only from a foot to fifteen inches high. These can be had at low prices; it is well to get a considerable number more than enough for the planting, and set the overplus in the garden to be used afterwards for supplying the places of any that may die.



HANGING BASKETS.

Hanging pots and baskets seem to have come into almost universal use the past few years. These are usually of earthen-ware, wire work or rustic work. Those of earthen-ware which are glazed or painted are not considered by some to be as healthy for the plants as those that are unglazed, since the moisture cannot escape through the sides of the pot, but I find by being very careful not to over water, I can keep plants in them in a healthy condition. Baskets of wire work are apt to drip more or less, and they seem more suitable to hang beneath a porch or piazza, in summer. I like best those of rustic work, where a variety of plants are to be grown together. They can be bought at very reasonable prices, or, where economy is desirable, may be manufactured at home.

My rustic basket had been used for years, and had decayed past all hope of repair, so I told JOHN he might make me one some rainy day, adding that a nice one the size I wanted would cost about a dollar. "Well," said he, "I wouldn't pound my fingers or vex my soul for twice that, I'd rather buy you a new one." "All right, thank you," said I, and in due time the new one appeared. I had slips and plants already started for it, and the last of September I proceeded to fill it. I use the same soil for basket plants that I do for others, first putting in broken charcoal at the bottom, with a handful of moss over it. The charcoal serves as fertilizer and purifier, and also absorbs the surplus moisture, giving it out again when needed. All hanging baskets should be turned every few days, and should be sprinkled with tepid water once a week, twice a week would be better, as the atmosphere where they hang is much dryer and hotter than that sur-

rounding the plants on the stands beneath, consequently they will be more liable to suffer from attacks of the red spider. I believe in "immersion" for them, as water, water, water, is the only remedy; they dislike moisture.

I like to water my plants and baskets as early as convenient in the morning, using warm water, and toward spring I give them, once a week, a drink of barn-yard tea, about the color of weak coffee, being careful not to give it too strong, or too often. For a rustic basket a foot or more in diameter one needs something showy and graceful for the center, as well as a little taller. A crimson *Dracæna* is good for this purpose, so, too, is the white edged green variety. I have sometimes used a bright *Coleus*, but it needs constant pinching or it will grow too tall. Around the center may be grouped Ferns, with a rich *Begonia* or two, a bright foliaged *Geranium*, with *Ivies* or *Maurandya* to run up the handles, and *Lobelia*, *Musk*, *Vinca*, *Tradescantia*, &c., to droop over the sides, interspersed with *Sedum*, *Wandering Jew*, *Panicum variegatum* and *Italian Grass*. *Coliseum Ivy* is very pretty growing in a large sea shell suspended from the window, and the pretty, free flowering small *Oxalis* is fine, and looks and thrives best by itself. Last winter, I planted the yellow *Oxalis* in the same pot with the large pink variety, and they were very pretty grown together, as the sprawling habit of the former was well hidden by twining its long stalks among the stout foliage and bright blooms of the large pink *Oxalis*, and the colors harmonized finely. A plant of the Ivy-leaved *Geranium*, *L'Elegante*, is very attractive, with its Pea green leaves edged with white, often tinted with carmine, and is an ornament to any room.—MAY MACKENZIE.

LANDSCAPE ART.

The first great requisite qualifications for a landscape gardener is a knowledge of the relation of parts to the whole and an inherent love of the beautiful. Then comes a knowledge of materials and their fitness for various parts and effects; for instance, a thorough knowledge of trees, their hardiness, rapidity and mode of growth, various soils and subsoils and their capability for given purposes, and to be able to tell the best trees and

distance beyond, one at once feels the appropriateness each of these parts bears to the others, and their relative value and appropriateness to the whole. The vast and rich massiveness of the building, fully thrown out and upheld by its gorgeous setting, the grand old trees, the noble expanse, everything rich, noble and impressive, gives one a feeling of immutability. This is no thing of one or one hundred years; this is not of the present time, but has lasted and will last till our



OLD RUIN, NORTH WALES.

shrubs to plant in a given area to give the best effect. How to make a large place look more grand and imposing, and how to make a small place look large and fine without being crowded; for example, standing on one of the quaintly designed, artistically bedded, neatly kept terraces of some of the old baronial residences in England, looking down at the acres of geometrical beds in the flower garden, glowing with all the colors of the rainbow, with their rich setting of Rhododendrons and rare Conifers, or, it may be, seated upon the stone balustrade, or leaning against one of the antique vases that form part of the terminal balustrade of so many of the rare old terraces in England, looking across the flower garden to the charming vistas seen through the grand old monarchs of the forest where the herds of fallow deer sport among the Bracken, softening down into the hazy

time, at least, is no more. I have had the same feeling when looking at some of the grand old pictures by the master hands of art long since gone. Their works yet live and will live when we commoners are forgotten. The same feeling comes upon one when alone on the sea shore, looking at the vast, unceasingly restless mass of waters; time vanishes, I am in the eternity. So, also, I have felt when standing alone beside some mighty snow-capped giant of the everlasting hills. Of a time, when once nearly lost in the somber Pine forests of Russia, I cannot put the feeling in so many words; but it was as if I were brought into contact direct with nature's God, the "veil of flesh" taken away, and I caught a glimpse of the unutterable grandeur of God's eternal works.

Now, go from such a scene to one of these pretentious stucco-palaces on two

or three acres of land, or even less, and look at their terraces, flower gardens, lawns or parks, all in imitation of the English manor, and you will be apt to cry with me, in a tone of deep disgust, shoddy and vanity! And all to no purpose, for *parvenu* is written upon every thing. There is too much ostentation, too much display of money, too much varnish and veneer, which plainly tells you, as the owner would himself, in very many cases, "I am the rich Mr. So-and-So, and these things cost me so much a year." Every thing seems out of place as much

and Monsieur ANDRE, and I am convinced that if landscape gardeners would use simpler lines and curves, and pay greater attention to fixing the places for permanent trees, they would produce much more charming effects. In small pleasure grounds avoid straight lines, in kitchen gardens avoid curves. But this may be taken as an axiom; HOGARTH'S line is especially the line of beauty for the landscape gardener.

Again, in artificial rockwork, how seldom we see a pleasing or natural effect. The only one who comes up to the



PRINCES PARK, LIVERPOOL.

as a silk gown on a bare-legged Irish lass. It puts me in mind of a yarn I once heard told of Sir JOSHUA REYNOLDS. One of the chief men of old King Grog, one of the fattened, money-gorged brewers of England took it into his head he would have himself and his landlady immortalized by being painted by Sir JOSHUA. When giving orders for their portraits, our knight of the Tom asked, "What are your two dearest colors, Mr. Artist?" "Oh," says Sir JOSHUA, "Ultramarine and rose-carmine." "Well, you must paint my picture with nothing but ultramarine, and use your other dear one for my wife, for you must know, Mr. Artist, I am the rich Mr. So-and-So." I hope he got them as ordered.

I have had the privilege of studying the two grandest, or, rather, two of the grandest, landscape gardeners of the nineteenth century, Sir JOSEPH PAXTON

standard, in my opinion, is Mons. ANDRE. His rockwork, cascades, grottoes, &c., in Sefton Park, Liverpool, is natural and very pleasing, whereas, most rockwork that I have seen has been just the reverse, for instance, in Princes Park there is a large piece by Sir J. PAXTON, the design admirable, the execution execrable. Most of the rockwork we see is simply an agglomeration of pieces of various rocks stuck endwise in a bank, and surely none that had studied nature at all would call it rockwork. Mons. ANDRE made a grotto in Sefton Park that would hold one hundred people, with an opening at one end in the top, and steps leading down to the floor, from which were three openings or entrances from the lower level, and when I left, some five years since, the whole top was covered with shrubs, while Cotoneaster, Virginia Creeper, Brambles, Ivy, and various

other creepers intermingled and clothed the front. Standing before it, or walking within it, one could scarcely persuade one's self that it was the work of man, all was so natural. I remember once being sent for by a gentleman to make a rockery on his lawn, and you may conceive

ruined chapel in the pleasure grounds at Penrhyn Castle, Bangor; the chapel had, in most places, fallen to pieces, two window shafts alone standing, draped with Ivy. Some one had introduced a little mold in some of the fissures, and the leaves falling had made more, and so, in



VIEW IN BISMARCK'S GROUNDS AT VARZIN.

my dismay when I saw the materials. Huge, round, smooth boulders of granite and limestone, some very beautiful small pieces of moss-covered, water-worn sandstone, and all the rest of the materials, broken capitals, friezes, sections of arches, portions of pillars, portions of statues in stone, and in all every epoch of architecture had there its representative. For some time I was staggered, but, all at once, I remembered seeing in one of my rambles in Wales, an old

time, it became a very beautiful ruin, wild and tame plants growing together. So I arranged my material and made somewhat of a semblance to an old ruin, and was fortunate in giving satisfaction.

Statuary can be used with great effect in landscape gardening, if used judiciously, but it requires great care in placing to have a good effect, and ought never to be used in a small place.

Miss BIRD tells that in Japan, in a few yards square, they will have their minia-

ture lake, grotto, river, bridge, trees, shrubs, &c., but that style would not suit the Anglo-Saxon race, it is too much like playing baby-house. Water, more or less, ought to enter into every landscape, and it ought to be so arranged that not more than half of it can be seen from any one point; to be effective we ought never to see the beginning and ending at the



FORM OF ARTIFICIAL LAKE, WITH ISLANDS.

same time. This is beautifully exemplified in the lake at Princes Park, by Sir J. PAXTON; it is the exact shape of a human leg slightly bent at the knee, or as here represented in outline. In this design you have a good stretch of water always before you, with a prospect of more beyond, and the effect was the most pleasing I have ever seen. If landscape gardeners would always bear in mind that generally the simplest airs have the richest harmonies, that simplest subjects make the grandest pictures, and simplest designs make the most pleasing pleasure grounds, we would not be offended by so many strained, formal and unnatural garden effects.—WM. HY. WADDINGTON.

FARMERS' PRIVILEGES.

I was glad to read SUSAN POWER'S article about "Living from the Garden." She "hit the nail squarely on the head." As a general thing, persons who have to buy vegetables and such fruits as are raised in the garden, have more of them than the farmer and his family. It ought not to be so. It will not be so when farmers wake up to a sense of the privileges afforded them.

The farmer, I am sorry to say, has gradually got into a habit of thinking his profession so much inferior to that of the lawyer, the merchant, or the manufacturer, that it is hardly worth calling a profession. He has allowed himself to become a victim to the idea which has heretofore been prevalent, and has worked a great deal of mischief among young men, that if any one hadn't ability to do any thing else, he could be made a farmer. As if farming did not call for as

much ability as any profession to be successfully carried on. But the idea has obtained foothold and been accepted without taking pains to question its claim to consideration, and consequently the farming class has come to consider itself as a fag-end of everything else, useful in its way, but not entitled to much regard from any one, and the natural result of such consideration has been that the farmer has not had much respect for himself. It did not matter much how he got along. To live was the main thing, or, perhaps, it would be more to the truth to say that he was satisfied to exist. There were things about life that were very enjoyable, but not for farmers. They must drudge, and leave the enjoyment of luxuries and pleasant hours to those making up the other professions. They acted as if they hardly felt themselves entitled to any thing pleasant, because they were farmers. I am happy to say that there is a change taking place in the sentiments of the farming class. This change is largely due to the wide-spread circulation of books and papers published in the interests of this class. The farmer is beginning to see that he has undervalued himself and his profession. He is beginning to see that his profession is second to none, and when he realizes its true dignity and importance he will have more respect for himself, and treat himself accordingly. It is an old saying that the world accepts a man at his own valuation. To a certain extent this is true. Because farmers have considered themselves inferior, they have been considered so by others, but the tide of opinion sets in an opposite direction to-day, and many a man who has belonged to some of the other professions is looking longingly at the farm. Such men understand better than most farmers, as yet, what the privileges of the farmer are. They know what it costs to buy vegetables, and fruit, and butter, and eggs, and stand the chance always of getting an inferior article for a not inferior price. They realize, too, the pleasure and recreation afforded by work in the garden. But the farmer does not see enough change in garden work from ordinary farm work to make it specially fascinating to him, and never will, I suppose; but he is getting "his eyes open," and sees that in neglecting the garden, as he has persistently

done in the past, he has been giving up to the lawyer, the minister, the merchant, the editor and the manufacturer, to all other professions, in short, much that goes to make life enjoyable, that he might have had if he had been willing to make the effort. Perhaps some readers may smile at the idea of life's being more enjoyable because of a garden, and the vegetables growing therein. Well, let them. It is true that a great deal of enjoyment comes from a gratification of a person's appetite, though some super-æsthetic persons would ignore the existence of such a thing. But it exists, and I see no more reason why we should not gratify the appetite for food as well as the appetite for beauty. GOD created both, and what He has made we have no right to ignore. There is health as well as enjoyment in the garden. We need more variety on the farmer's table. This variety the garden will afford, not only for the summer, but the whole year. The labor and expense is not large; the return is great. With a good garden and a cow, many families can, and do, live well on a small amount of money.

Do you realize the possibilities in gardening, though it be carried on in a small scale? Here will be "greens" in early spring, a healthful dish relished by most persons. Close after this comes Rhubarb and Asparagus; then Lettuce, followed by Peas and Cucumbers, with Strawberries along about the same time. Then will come Potatoes, and Currants, and Tomatoes, and green Corn, with Onions, early Cabbage, Beets, Radishes, Raspberries, and later, Grapes. See what a variety there is. With cream and butter at hand, how many appetizing dishes the housewife can make from them. What have you to buy to fill out the bill of daily food. Your flour, perhaps, your sugar, and a little meat. But your meat need not be bought, if you are a farmer. You can procure it from the poultry yard or the pasture. Farmers have the means at hand to live better than any other persons in the world. Let them live up to their privileges, and treat themselves with the respect due them from those in other professions. They are beginning to, and the day is dawning when to be a farmer is something not to be ashamed of, rather to be proud of and thankful for.—EBEN E. REXFORD.

A PLEA FOR HOUSE PLANTS.

Is it not strange, in these days of free schools, free press, and numerous other ways of disseminating knowledge, that so much superstition should exist? I think it would be difficult to find many people, if, indeed, any, utterly devoid of superstitious ideas, even though they might disclaim the fact. It almost seems as if a certain amount of belief in the supernatural formed a part of the composition of poor humanity, so deeply is it ingrained in our very nature. Without doubt, many of the fanciful ideas entertained by people arise from a want of knowledge of the laws of nature, and perhaps the prejudice which some entertain against house plants may be due to this reason; but when people draw so extensively on their imagination as to impute qualities akin to those possessed by the fabled Vampire, I think it is time that some one should speak a word in defence of the poor plants which can only speak for themselves by silently performing their mission of purifying the atmosphere and brightening the earth with their beauty.

Some people, who will tolerate plants in the living room, are afraid to keep them in sleeping rooms; others have a vague idea that, perhaps, plants prey on people, *a la Vampire*, while still another class reserve their aversion for some particular plant which they consider "unlucky" to keep; in fact, if one had a list of the various reasons why people look upon plants with distrust, it would be interesting as an evidence of what the credulous can bring themselves to believe, even in the nineteenth century.

It is bad enough for house plants to be maligned and misrepresented by those who do so with an honest belief and in an honest ignorance, but when one hears of an occasional physician (and only an occasional one, for the honor of the profession be it said,) lending his voice to the general outcry, it is enough to make one wish that without at least a slight knowledge of botany and chemistry, and a little, just a very little, common sense, no man should be allowed to practice medicine upon a confiding people. Even the worst enemy of house plants would not hesitate to tell you that out-door air is good for any one, and the more you are out the better for the health, and yet

the whole landscape is covered with plants, and the air you breathe has swept over myriads of leaves and blossoms. It is the office of the vegetable kingdom not only to purify the air by taking up carbonic poison and sending forth life-giving oxygen, but it is also our benefactor in another sense, for, says ASA GRAY, the eminent botanist, "The great use of plants is to take portions of earth and air upon which animals cannot subsist at all, and change them into something upon which animals can subsist—into food. All food is produced by plants." We can neither live without oxygen nor food, therefore plants are necessary to our very existence, we cannot live without them. Some trees and plants seem more than others to possess the power of divesting the air of its poisonous qualities, notably the Eucalyptus, which, it is said, will purify the malaria laden atmosphere, and which is planted extensively for that purpose. Then, if it is true, as stated by those who know whereof they speak, that plants are the agents by which the earth is rendered inhabitable, will any one kindly tell us how they can be so changed in their nature by being brought into the house as to be injurious to the health, or dangerous to human life? So far from being detrimental to health, experience teaches me to believe that all house plants, with, perhaps, a few exceptions, such as the Tuberose, and a few highly-scented varieties, which should be kept in a moderate quantity, are decidedly beneficial, and I believe that plants, wherever grown, struggle to perform their God-given mission, and will still endeavor to benefit their possessors, although choked by the dust and stifled by the heat of our modern living rooms.

—L., *Hoosic, N. Y.*

PLANTS IN MOSS.

In volume 5, page 244, you invite reports on experiments with fertilizing moss. No doubt the following may be interesting to the readers of the MAGAZINE. On the 18th of October last, I took a very young plant of the Double Geranium, Depute Lafize, and having prepared a lobster tin with holes in the bottom and half filled with pure moss, well pressed down, I then very carefully washed every particle of earth from the roots of the plant, and spread them out

on the moss in the tin and filled up with more moss, well pressed down. I have kept it continually exposed to the sun, and have never given it any thing but pure water, and very little of that. It is now in blossom, the flower is larger, has a richer tint, and the plant itself is far more vigorous than any of my other Geraniums. It is quite a curiosity and a pleasant surprise to many. I am also growing Dahlia cuttings in moss.—WM. S., *Port Maria, Jamaica, W. I.*

ARBOR DAY.

The idea of specifying a certain day for a general planting of trees on roadsides and in public grounds; an arbor day, is good so far as it encourages the excellent object in view, but liable to discouraging disappointment and failure through unfavorable conditions of weather, soil or season. Some one lately advocated the making of Decoration Day an Arbor day, but there is little congruity between the labor and toil of planting and the observances and duties of cemetery decoration, nor is one day sufficient for both. A better method, surer of success, would be to do the planting at the best season and in suitable weather, and then to have the trees labelled with name and date, and made conspicuous by flags or colored streamers as part of the gala of Decoration Day. The date of that day, the last of May, is much too late for successful planting, even of evergreens.—W

GIVE SEEDS A CHANCE.

Soaking some kinds of seeds make them inconvenient to handle, and yet if sown dry the weed seeds which are in the ground, and already swollen and ready to start, get ahead of those we wish to have grow. For years I have been in the habit of putting all very small seeds into the ground in their original packages, just long enough to swell them, and have the little teeth coming out; cover the proper depth and press firmly. Just before planting, give the ground a thorough stirring, so as to disturb all the weed seed already sprouting. This is particularly applicable to fine flower seeds. If the seed is very valuable and scarce, I wrap the paper packet in a rag of muslin, so as to be sure to lose none if the paper should tear in taking up.—S. MILLER.

DRACÆNA.

Dracæna indivisa, or, more correctly, *Cordyline indivisa*, is an Australian plant of much grace and beauty, belonging to the natural order Liliaceæ. It is a plant that is grown for its foliage only, and one that is well adapted and much used, for exhibition and decorative purposes,

cultivated of the entire tribe, requiring during the winter season a temperature of from 50° to 60°; a suitable compost may consist of two-thirds well-rotted sods and one-third old, mellow manure, and, if possible, a little bone should be incorporated in it. Be careful not to overpot the plant, and be sure to drain



DRACÆNA INDIVISA.

where its long, graceful foliage cannot fail to attract attention. It is a native of Australia and New Zealand, and in cultivation attains a height of from two to six feet; the leaves are long, slender, and of a dark green color, from one to three feet in length, and three-quarters of an inch in width, the lower ones being gracefully recurved and drooping in habit.

It is one of the hardiest and most easily

the pot well. Water should at all times be freely supplied, and the plant frequently syringed, and when grown in the window garden sponge the leaves occasionally, in order to remove dust and insects. A little liquid manure given from time to time is also very beneficial. During the summer season the plants can be planted out either in the open border or in a partially shaded situation,

as they are not injured by sun or heat if care is taken to give at all times a liberal supply of water. When grown in pots or vases they should be repotted at least twice a year, in order to keep them in a healthy condition. The only insect to which this plant is subject is the red spider, and this can be removed by syringing the leaves; but if the plants are as frequently syringed as they should be, few, if any, insects will make their appearance.

As the plants attain a height of from four to five feet, in the course of a few years they begin to lose their lower leaves and get bare at the base. In the greenhouse this occurrence is of no consequence, as the plants can be so arranged as to hide the naked stems, and specimens grown in this manner are sometimes highly prized for decorative purposes, and moreover, are, by some, considered quite a curiosity. In the window garden, plants well furnished with leaves are to be preferred, so that when they become unsightly from this cause they can be renewed very quickly by this simple process: Cut a notch in the stem on one side, just below the lowest good leaves, and take out a piece of the wood, then do this on the other side of the stem, but not opposite the first notch. The object being to check the flow of sap at this point, yet permitting enough to pass to support the head. Then take some moss and bind it around the stem, covering the incisions, and fastening it on with twine or wire. The moss is to be kept moist, and in the course of twelve or fourteen days the stem will have thrown out young roots above the notches. Then the head can be severed from the stem and potted in a medium-sized pot. It must be placed in a shady position for a few days, then gradually exposed to the light.

To those who possess a greenhouse, the plant may be increased more rapidly by cuttings of the stem; the stem being cut into pieces an inch or so in length and all of these pieces split in two. Most, if not all, of these pieces will root and become plants if given a brisk bottom heat of 70° or 80°. Give them a light, sandy soil, and they will break into growths in the course of ten days. When well rooted take up and pot into three-inch pots, using light, sandy soil, keep

close and moist until well established, then gradually expose, and shift as often as it is necessary. Good strong plants can be obtained of any of our florists at a moderate price.—CHAS. E. PARNELL, *Queens, L. I.*

REVIEW NOTES.

I like VICK'S MAGAZINE very much, indeed, and the October number especially interests me. First, there is EBEN E. REXFORD'S letter, in which he tells us how to get ready to keep our treasured floral darlings from the clutches of Jack Frost. This danger, which is always before my eyes, adds another horror to winter's icy reign, and many are the efforts I put forth to prevent their meeting such a terrible fate. One unguarded hour will undo weeks, yes, months, of patient care. It is not often that I am caught napping: often I am the only one in the village whose plants escape. One night, last winter, I was so sick that I, and every one else, forgot to arrange a curtain in the particular way provided for particular emergencies, and the result was that in a pot containing three fine Callas, all in blossom, only one escaped. The next morning, or, rather, nearly noon, when I first saw the disaster, I felt, to put it mildly, that I was sorry. There was not as much harm done as might have been, for the Calla that was left now fills the pot and nearly an entire window, and the blossom which now graces it is the largest one I ever saw. I have only three windows full of plants now, but have given away, put down cellar and let freeze enough to stock a small greenhouse. It is the dream of my life to sometime have a small conservatory of my own.

The article by SUSAN POWER attracted my attention. It seems as though I must have known her in some former stage of existence, or else wrote the article myself when I was dreaming, only I know I never could write it as well as she has. The descriptions of her garden and her trials and difficulties with it, are quite natural. I should think that there were as many stones on her lot as there were on ours. I like her idea of building a stone wall around it, high enough to keep people from looking at me when I am at work in the garden. I am not a misanthrope, by any means, and never

object to company at proper times and places, but as a general thing one does not put on the best clothes when at work there. I certainly don't. We live about half way up a hill at the top of which is a large house where they take city boarders, and just when the most work is required in the garden is the very time when the boarders are inclined to make a constant procession of themselves. I really am inclined to think that if I should go to work at twelve o'clock at night they would be on hand. I have always been sorry that we did not plant a hedge or build a stone wall seven feet high; we had stone enough, goodness knows. Not satisfied with what lay on top of the ground, JOHN went to work and dug and blasted, until I was afraid we should be compelled to buy more land to hold the rocks he unearthed. It would take too much time to tell all the ways he had of disposing of the stone, but finally we used the last in building a terrace across the top of the garden. I can't say it is any great improvement, but it used up the stones.

In one of the numbers, I don't remember which, there was a letter from a lady who lived at Castle Rustico, in the Adirondacs; I have never seen the lady, but I have the place where she lives. It is on the west shore of the beautiful Lake Placid, and only a few miles from the spot where JOHN BROWN is buried. It is the strangest, loveliest spot I ever saw. There is no road to or from it in any direction; you have to go by water. There are three other camps on the shore of the lake. They all keep boats, and there are two little steamboats that fetch and carry any one or thing that is wanted. The house is built of logs, and is three stories high. I have been told that they sometimes have seventy-five boarders. I only saw it a few moments from the deck of the little steamer in which we were making a circuit of the lovely lake, which is only about three miles long and half as wide. There are three islands, and one of them is really quite an island. We were staying a few days at the pretty little village which has grown up nearly two miles from the place where Camp, or Castle Rustico is situated. I very much wish to go back and stay there a week or two. It is thirty-eight miles from the lake on the shore of which I live, to Lake

Placid, and certainly for half that distance the road is the worst I ever saw. If it were not for that I might possibly hope to see that lovely spot again. It must be rather lonely in winter, but with good company, plenty of books and papers, and blossoming plants and bulbs, one could be very happy there.—PENELOPE PEPPER.

ONIONS—PRIZE ESSAY.

It is absolutely essential to success in Onion culture that the ground should be rich. Almost any soil that is free of sticks and stones, can be made to raise good Onions if it is thoroughly drained and fertilized; but the land that is right naturally is scarce.

My Onion patch is black ground, something like Illinois soil, naturally well drained, gravelly subsoil, and one side, perhaps one-third of the piece, quite gravelly. It is here that I raise my largest and best Onions. The piece contains three-fourths of an acre. It has had about forty loads of well-rotted manure each year for the last three years, it having been put on in the fall and plowed in, when possible to do so, immediately after the crop has been taken off. In addition to this, I have put about fifty bushels of unleached wood ashes on, each year, having spread it on the surface and harrowed it in just before seed sowing. I try to have the sowing done by the tenth of April at the latest.

The manner of preparing the ground is as follows: Plow as shallow as possible and cover the manure all up, say five or six inches. Harrow with an Acme harrow, as it draws the straw, &c., down into the ground; any harrow with teeth slanting backwards is the best. After thoroughly harrowing, go over it with lump smasher or leveler, which is a plank concern, six feet square, put together like the clap-boards of a house. It effectually pulverizes the surface, fills the horses' tracks, and leaves the ground level. Raking with a hand rake is expensive and it cannot be done so perfectly that the seeds, when sown with a Matthews' Drill, will not be very unevenly covered. It may be necessary on some pieces to harrow and smooth several times. The ground must be very fine, and the firmer the better, if it is not actually hard. I can fit my Onion patch in this way in one day

with a team. The variety I usually sow is the Yellow Globe Danvers.

The next thing is the cultivation. As soon as the Onions are large enough so that I can see the rows, I start the cultivator. I sow thirteen inches apart; the knife on the cultivator, which is a two-wheeled one and works between or astride the rows, is eleven inches long, and this cuts within an inch of each row. I run the knife, which is two inches wide, just beneath the surface, and the ground is disturbed but very little; however, every weed which has sprouted is killed. Then I put on the little hoes, similar to those on Ruhlman's cultivator, set them an inch and a half apart, one on each side of the row, and go through them again. Then we get down on our hands and knees, or rather, elbows and knees, and weed them. I employ mostly men, as boys are usually not thorough enough. About three cultivatings and two weedings usually bring them through.

We pull them either with a wooden rake or with the hands; two men will pull a half acre in a day, if they are ripe. They should be allowed to lie three or four days in the sun after pulling, or until they are thoroughly dried; if placed in barrels or in piles before becoming thoroughly dry, they sweat and spoil very rapidly. The cheapest way is to top them in the field, and let them lie again a day or two before putting into barrels or piles. This topping job is the most expensive part of it; it costs us about five cents a bushel to get the tops cut off, which should be done with a sharp knife, not with shears, as it detracts from the appearance of the Onions to have the top cut square off close down, and they are also more liable to rot.

The marketing of the crop was not included in the subject of this essay, or I would try and tell how we pack them, &c.

My first crop was about one hundred and fifty bushels on this same three-quarters of an acre; second crop nearly two hundred and fifty bushels; third, over three hundred, and this year we raised over four hundred bushels of merchantable Onions, besides about twenty bushels of the size HEINTZEL wants for pickles. The cause of the small ones was sowing a part of the patch too thickly. I find two and one-half pounds of good seed plenty for an acre, if it is all

put in at an even depth, say from one-third to one-half an inch; for if sown too thickly they will never get pulled out as they should be, and it injures those remaining to take part out.

The tools used in working the Onions should be so constructed as to draw the dirt from the plants rather than toward them, and in weeding it is well to be careful and not to leave any more soil near them than enough to support them in an upright position. As much of the weeding and cultivation should be done before they commence to form bulbs as possible, yet if weeds are there it pays to take them out after they have commenced to bottom.

Onions will not bear neglect and make a profitable crop. Plenty of manure, thorough fitting of the ground, good seed, and clean cultivation are the essentials to success in the cultivation of Onions.—W. ABELL, *Linesville, Pa.*

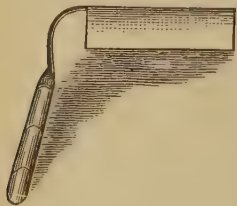
FIELD CULTURE OF ONIONS.

The demand the past few years for Onions has caused no little thought and experiment with wide-awake gardeners how to successfully meet it, and no doubt many, as I have done, have resorted to different methods of planting, cultivating, weeding, &c., and the best kind of tools have been practised with to keep down the weeds and to improve the crop. In some places at the north the Onion can be raised on new ground by sowing broadcast, but not with good success, as the weeds most always get the advantage of them and choke them out. I never tried broadcasting but once.

My method is to select a rolling piece of ground, sloping to the south. The ground should be strong enough to raise a heavy crop of Corn; it should be plowed in the fall, so as to be ready to sow early in the spring, which is one of the most important points. As soon as the ground will work well, or in March or the first of April, harrow the ground thoroughly and run over the ground crosswise with a float made of two inch Oak boards, one foot wide, and as long as desired; bolt three pieces together, lapping one on the other, like clap-boards, thus forming a most perfect clod-masher and leveler. Plant the seed in drills, not less than fourteen inches apart, and I prefer fifteen inches, and a half inch deep,

using a reliable seed drill, and I can recommend the Matthews' drill as the simplest and most perfect one in use.

As the seed is a long time in germinating, and weeds and grass are likely to get the start, the ground selected should be as free as possible from weed seed, and kept clean. The Onion may be raised on the same ground several years with good results. After the tops appear an inch or so above the ground, start a careful man, not a boy, with the wheel hoe, passing twice in the row, shaving every thing clean but the strip where the Onions stand. If the Ruhlmann Wheel Hoe is used it will save the labor of at least six hands with the common hand hoe. Many fail and give up at the hand weeding. This operation must be performed either with the fingers or with the small tools made for that purpose. At this work boys, and girls, too, can be employed, and I would rather have one good girl than two boys, as the girls appear to realize the delicacy of the work, and set out at it more carefully. Every weed should be pulled out, and the Onions thinned to two or three inches apart, and by doing this first weeding thoroughly the wheel hoe will nearly complete the cultivation, or at least till late in the season, so that one



ONION WEEDER.

more hand weeding will be sufficient. I wish to offer a pattern of a hand weeder that I invented after trying all others, and wearing out finger nails faster than they could grow. This weeder is very simple, and will do more work than any four others I have ever tried. It can be made by any good blacksmith out of an old file, or any piece of steel that will polish easily. The blade should be two and a half inches long by one and a half inches broad, with the handle at the right end, the other end and the lower edge sharp, and appearing as shown in the present illustration. It will be seen this little tool can be slipped in between the Onions, and will take out all the weeds; it works with perfect ease.

After the last weeding, keep the wheel hoe running, going over the patch every week, and the motion of the hoe will cut

out and cover up nearly all the weeds. By the use of good seed, good ground, good tools to cultivate, and a little patience, a field of Onions can be raised with as much certainty and success as any other crop.

The model of this little hand weeder I wish to donate to the MAGAZINE as a Christmas gift, with the privilege of having the same manufactured and distributed at a reasonable price to all parties interested in Onion culture.—P. C., *Sigourney, Iowa.*

MIGNONETTE.

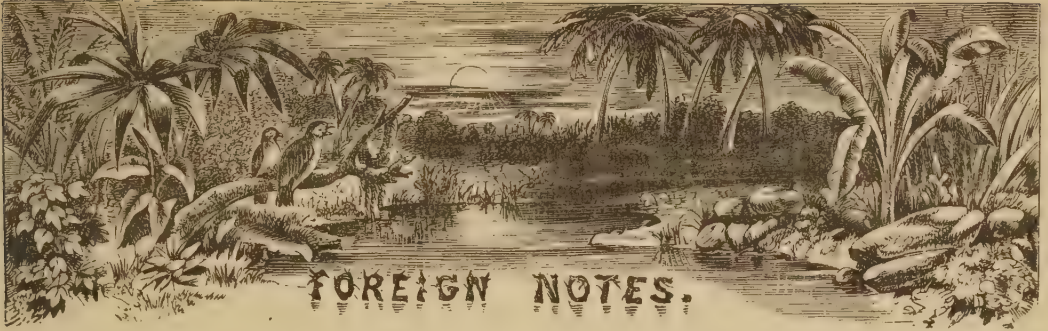
It has only been a few years since we knew only the small, unpretentious Mignonette, attractive in appearance only as seen through the microscope, and then it magnifies into great beauty. Now we have varieties bearing large and handsome spikes of bloom. Cannell's Perfection is large-flowered and pyramidal in growth, said to be the best of all. Then there is Miles' New Hybrid, dwarf habit, branchy, with spikes from eight to fourteen inches in length, very fragrant. Parson's New White, Garaway's White, Crimson, and the latest novelty, Golden Queen, which I can recommend for its beauty and sweetness.

Mignonette derives its name from the French, and means little darling. Its language is very appropriate; "Your qualities surpass your charms." It originated in Egypt and North Africa, where it grows, by training, into tree shape. A French writer states that she has seen them as old as fifteen years, and even double that. MARY E. DODGE thus praises it:

"This fragrant bloom of garden birth,
Is modest, yet persuasive,—
Because the sweet it saps from earth,
By fullness is invasive—
In truest measure of my love,
Of all the flowers I've met;
Une 'herbe d'amour'—petite in girth,
Delicious Mignonette!"

—MRS. M. D. WELLCOME.

ROSE GROWING.—Our Horticultural Society, at a late meeting, discussed the subject of Rose culture. The prominent idea brought out that may be new, is that the plants give finer blooms if moved occasionally into new ground. Four years was considered long enough for them to remain in one place.—M., *Boston, Mass.*



ENGLAND AND ITS POOR.

The *Gardeners' Chronicle*, in a late number, considers the subject of the increasing poor in the cities of England, in connection with the occupation of gardening. The ownership of the greater part of the arable land of the kingdom by a few persons is thought to lie at the foundation of many of the ills that afflict the country. "The overcrowding of the masses in our large towns," it calls "the exciting, and, indeed, pressing question of the hour." It states as a fact that "myriads of those now urban dwellers have been driven by the force of circumstances, such as the gradual expansion of small farm holdings into large ones, from their native rural habitat into the more artificial life and existence of towns, where they but serve to swell a population already far too dense, and thus create evils that have at last attracted the attention of the governing bodies of the nation. That such migration of our rural population is no myth statistics of undoubted accuracy show, and whilst we have been marvelling at the enormous growth of our large towns—the metropolis especially—and have wondered again and again what would be the end of it, we have been unconsciously adding to the evil by driving the people from off the land, the prime source of our wealth and prosperity, to herd like swine in foul habitations, where they do but become sources of danger and weakness rather than of happiness and prosperity."

The writer proposes to check the migration and reattract many of the crowded and starved denizens of the large towns back into rural life and happiness. "We can hardly too soon set about such a change in our modes of holding and cultivating the land as shall render that cultivation a source of attraction to myriads

and of wealth to the nation. In what other way can we hope to obtain this desideratum than by breaking up many of our huge and now unprofitable farms into small holdings, and myriads of fields now producing from shallow horse cultivation poor crops of Corn into gardens which, cultivated by the hand of man, in reality and in earnest, shall create for the nation vast quantities of food for consumers and of wealth for the workers." Again, the writer says: "So far from our land producing double the food or wealth it formerly did it is open to doubt whether, acre for acre in cultivation, it is producing so much as it did twenty years since."

The writer mentions meat, poultry, eggs, butter, fruit and vegetables as products that cannot be at present profitably raised, but which might be largely produced if the right course were pursued for the attainment of that object. "Our difficulty lies, first, in hardly knowing how or where to begin. We cannot settle the people, the workers of the soil and producers of food and of wealth, upon the land, whilst to it they are aliens. The land is neither theirs to purchase nor to occupy, except it be in the case of those vast farms that need much capital to work them, and which capital fades away as does the snow under the sunshine, only less pleasantly. We cannot advocate a vast socialistic act which shall take the land from those who now own it, and let or sell it to all who may wish to cultivate it. We can hardly now do other than appeal to land owners to do away with the system of big holdings, and split their huge farms of six or eight hundred acres into fifty or more small farms, each of which may support its owner's family, and a well paid laborer or two, so that where the eight hundred acres shall now give employment and life to twenty

people, the same acreage, divided into many small holdings, shall provide labor, food, and a livelihood for two hundred souls. By a system of small holdings not only do we repeople the land, but by it, and by it alone, shall we ever be able to raise vast quantities of eggs, poultry, and other farming products that would be so wondrously profitable to us, did we but prefer to produce rather than to purchase them. Then, too, should we find every occupant of a holding keeping his few cows and pigs—all marvellous sources of wealth, if rightly cared for; and then we should further find immense aids to the production of these arbiters of food, as well as of fruits and vegetables, did we farm our small holdings less and garden more.

"We have less need of beating our swords into plowshares and our rifles into reaping-hooks than into spades, hoes, and digging forks. These are, indeed, in the hands of a robust and industrious laboring population, the greatest factors we can look for in rural prosperity. Britons never should be slaves, but at least they should all be workers, earners, and spenders. We find our trade and commerce failing in many directions, and naturally such must be the case when the land is giving to the peasantry so little to spend. Increase its productive power, and in so doing increase its human working power, and at once a splendid impetus is given to trade in other directions. The problem is one for statesmen and land owners to solve rather than theorists and philanthropists, but no solution will ever prove sound or satisfactory that does not aim at making the soil for the people, and returning the people to the soil."

TREE MYTHS.

A writer in the December number of *Forestry*, published in London, England, entertains its readers with "Tree Myths." By the way, the editor of *Forestry* is GEORGE FRANCIS HEATH, who has lately made himself specially known to American readers by his fascinating article, "The Fairest County of England," in the December number of the *Century*. "The ancients," says the writer, "called the Elm the 'tree of dreams,' *Ulmus somniorum*."

"In the 'Iliad,' Achilles bridges the enchanted streams, Xanthus and Simois,

with the trunks of an Elm tree. When Achilles kills the father of Andromache, he raised in his honor a tomb around which the nymphs came to plant Elms. At the first notes of Orpheus's lyre, bewailing the loss of Eurydice, there sprang up, we are told, a forest of Elms. In Sicily the Fig trees are often trimmed with Elm sprays with the idea of thus preventing the early Figs from dropping off before they are ripe.

"The Juniper is much venerated in Italy, in Germany, and on the shores of the Baltic, by reason of its alleged power to dispel evil influences.

"An aged crone of Signa, in Tuscany, thus related the legend of Madonna to De Gubernatis: Our Lady was flying with the infant Jesus, and Herod's soldiers were in hot pursuit. As they went, the Broom trees and the Chick-peas rustled, risking betrayal; the Flax stood bolt upright and apart; but as the fugitives drew near, a Juniper bush parted its branches to receive them, and closing, folded them in its friendly embrace. Wherefore the Virgin then and there cursed both the Broom and the Chick-pea, which from that day forth have never ceased to rustle. The frailty of the Flax she forgave; but she laid her blessing on the Juniper; and to this day, at Christmastide, in nearly every Italian stall, Juniper is hung, as branches of Holly are in England, France and Switzerland.

CHEMIN'S CELERY.

The *Revue Horticole* says that this variety, which was described in our November number, is not only remarkable for its beautiful ivory-yellow color which it attains naturally, that is, without blanching, but its quality is very fine and delicate. Besides, and contrary to what one would have thought, it is very tender, absolutely as if it had been blanched. But it is a spring variety, that is, it ought to be one of the first varieties sowed, consequently in the bed by March. It ought to be quickly used when ready; without this precaution the leaves wilt a little. This variety of Celery bears the relation to the ordinary kinds that the tender varieties of Cauliflower have to the more hardy ones. It is an early variety; sown at the same time as other varieties of Celery, it is ready for use a month earlier than they are.



PLANT INQUIRIES.

Please inform me through the MAGAZINE if you have the Lady's-Slipper. In the index of the GUIDE it is marked page 13, but I find nothing about it there. I have the yellow, and would like to have the red or purple if you have them.

Please inform me if *Lilium Paradalinum* is a good bloomer, and if it is hardy.

Is *Amorphophallus Rivieri* hardy, and what treatment does it need?—S. H., *Bloomington, Ind.*

If we could know what plant is meant by the name, Lady's-Slipper, the desired information might be given. At page 13 of the GUIDE different varieties of the Balsam, *Impatiens Balsamina*, are described, and this plant is very commonly known as Lady's-Slipper. *Cypripediums* are also so called. The only accurate way of indicating most plants by name is by use of their Latin names.

Lilium Pardalinum is quite hardy, and is an early and fine bloomer, coming in with *L. candidum*.

Amorphophallus Rivieri is a magnificent aroid, and principally cultivated for its large, handsome foliage. Its tuberous roots can be wintered like those of *Caladium esculentum*, in a dry, airy place, and in spring it may be started in a spent hot-bed, or a cold-frame, and then transplanted to the open ground, or when the ground becomes warm it may be planted directly in the place it is to occupy.

PLANTS DYING AND DRYING.

I have had two beautiful *Rex Begonias*, both are dead. I have had a similar experience with *Bouvardias*. Will you please give some information in regard to the treatment of these plants, whether they require much water, sun or shade.

I have a *Cobœa scandens*, a very pretty vine, but the lower leaves dry up. It stands in a sunny window. Can that be the cause?—MRS. R. A.

Begonia Rex is suited with ordinary potting soil, is better in the diffused than in the direct light of the sun, the soil should be kept moderately moist, the temperature range from 65° to 75°, and the

atmosphere be moist. The leaves of this plant being hairy hold the dust, and for the same reason it is difficult wipe them with a sponge; on this account more than ordinary care is necessary to keep the foliage clean. The leaves can be dusted with a soft brush, and as often as once a week the plant should be taken to the kitchen sink, or some other suitable place, and be well syringed on both upper and under sides of the leaves, the pot lying on the side to keep the water from the soil.

Bouvardias will make a fine growth planted out in the garden during summer and require no more attention than keeping them clear of weeds. Early in September lift them carefully with a ball of earth, and pot them in good-sized pots, let them stand in a shady place for a few days to recover, or, what is better, give them the close atmosphere of a cold-frame, slightly shaded from the sun. They can then be removed to the conservatory or window garden, but do not allow the atmosphere to be dry and parched. Water moderately as apparently needed.

It is the natural habit of the *Cobœa* to ripen its stem from the base upwards, and as this takes place the leaves wither and drop, but the process is unnaturally hastened by the dry air. This should be guarded against.

BEGONIAS DROPPING LEAVES.

What is the matter with my *Begonias*, *Gilsoni* and *Metallica*? I give them the same treatment as other *Begonias*, while they drop their leaves when only half grown, and do not blossom. I first try them in the sun, then in the shade; they are in a bay window facing east, where I have a great many other plants, including four choice *Begonias*. The *Gilsoni* looks as if its stem had been stripped of leaves. What soil do they prefer?—L. E. D., *Mason, Ill.*

The varieties named are not difficult

to cultivate, nor are they very particular about soil. They will need all the sun they can have in an east window. We suspect the difficulty with them is in the drainage, or in over watering. Turn the plants out of the pots, having prepared others with good drainage to place them in, remove some of the soil about the outside of the ball, and repot with some fresh soil; loosen up the top soil, and give a watering, and afterwards be careful not to over water.

NEW YORK HORTICULTURAL.

The January meeting of the New York Horticultural Society, held January 8th, had not as great a number of exhibits, or as large an attendance as the meetings usually have. The bitter cold and threatening aspect of the weather in the morning, doubtless deterred many who would have exhibited, and in the afternoon a driving storm of wind, snow, and rain proved to be very discouraging to those who desired to visit the show; as a consequence, the hall was lacking the gay and animated appearance it usually presents on such occasions. Though the number of exhibits was limited, they were very select, and those who were so fortunate as to attend were favored with as fine a display of Orchidaceous plants and flowers as was ever seen on exhibition, these alone being well worth the admission fee. This display was from the establishment of GEO. SUCH, South Amboy, N. J., and a faint idea of the beauty of the plants and the skill with which they were grown may be gained when we mention that a *Dendrobium Wardianum*, in a six-inch pan, had six spikes, each spike containing fifteen flowers, while a small plant of *Lycaste Skinneri*, in a five-inch pot, had fifteen of its superb flowers. Conspicuous among the cut flowers were excellent vases of *Phalænopsis amabilis*, *Calanthe vestita alba* and *lutea*, *Lælia anceps* and *autumnalis*, *Lycaste Skinneri*, *Ada aurantiaca*, *Dendrobium formosum giganteum* and several species of *Cypripediums*. Mr. J. TAPLIN, of Maywood, N. J., contributed a very tastefully arranged basket of cut flowers, mostly composed of choice Orchid blooms, and fine sprays of the old, but beautiful, *Euphorbia Jacquinæflora*. A vase of the beautiful *Statice Halfordi*, and another of *Canna Eh-*

manii, the large flowers of which will compare in size with any *Gladiolus*, were also exhibited by Mr. TAPLIN.

The display of cut Roses was limited, but the specimens were excellent; especially so were the vases of *Catharine Mermet* and *Perle des Jardins*, exhibited by Mr. W. F. GAY; and Mr. A. McKELLAR's Duke of Connaughts were simply perfect.

HALLOCK & THORP, of Queens, L. I., exhibited, amongst other things, three nice plants of the charming novelty *Impatiens Sultana*, and a very choice collection of *Geraniums*, viz., *La Elysie*, *Rigolette*, *Le Delibes*, Mrs. Gordon, Banford's *Glory*, Ferdinand Kamffer, W. C. Bryant, Mrs. Malcomb, Mrs. S. Thomas, *Cygnets* and *Mary H. Foote*; and in the professional division fine bunches of *Barbarossa Grapes* were shown by LOUIS COMPENDER, of Hartsdale, N. Y.

In the amateur's division, Mr. W. H. CLEMENTS, gardener to Mrs. M. J. MORGAN, contributed some fine specimens of *Orchids*, *Angræcum sesquipedale*, which is one of the most remarkable of the *Orchid* family, *Phalænopsis amabilis*, and choice *Cypripediums*, and numerous other rare varieties. This collection was tastefully interspersed with fine foliage plants, *Ferns*, &c.; amongst them were noticeable fine specimens of *Maranta Veitchii* and the beautiful *Dracæna Goldiana*. Two fine spikes of *Amaryllis aulica platypeltata* were shown by SAMUEL HENSHAW, and a fine collection of forced vegetables by J. C. GARDINER, gardener to P. LORILLARD, embracing dishes of *Asparagus*, *Bush Beans*, *Carrots*, *Tomatoes*, *Radishes*, &c., also a fine vase of *Amaryllis*, of sorts which we regret were not named. M. J. EDMONDS, gardener to JAS. MCCREERY, exhibited twelve varieties of *Carnations*, the individual flowers being very large and fine, showing the plants to have been well grown. JOHN EGAN, gardener to H. B. HYDE, contributed several varieties of *Roses* and a vase of *Mignonette*, the spikes of which were remarkable for size and beauty. CHAS. E. PARNELL, gardener to W. D. F. MANICE, Queens, L. I., exhibited a collection of cut flowers, amongst which were noticeable vases of *Franciscea latifolia*, *Clerodendron fragrans*, *Bignonia venusta*, *Allamanda nerifolia*, *Brunfelsia grandiflora*, *Rondeletia*

speciosa major, *Sericographys Ghiesbriantiana* and several varieties of *Geraniums*, of which two deserve special mention on account of their being so entirely distinct, viz., Mrs. Windsor and Luke Blackburn.—VISITOR.

SONNET—THE LOTUS.

Love came to Flora asking for a flower
That would of flowers be undisputed queen;
The Lily and the Rose long, long had been
Rivals for that high honor. Bards of power
Had sung their claims, "The Rose can never tower
Like the pale Lily, with her Juno mien."
"But is the Lily lovelier?" Thus between
Flower factions rang the strife in Psyche's bower.
"Give me a flower delicious as the Rose,
And stately as the Lily in her pride—"
"But of what color?" "Rose-red," Love first chose,
Then prayed: "No, Lily-white, or both provide."
And Flora gave the Lotus, "Rose-red" dyed
And "Lily-white," the queenliest flower that blows.

—TORN DUTT, in *The Century*.

JUTE.

The invention of a machine that will successfully prepare jute for market appears to open the way for the progress of a new farm product at the south. This machine, which has been thoroughly tried and proved satisfactory, is the invention of T. ALBEE SMITH, of St. Louis, Missouri. By the use of this machine, it is said that jute can be raised and prepared, and put into market at a much lower price than it is now selling for, and give the grower a good profit, although the present ruling price is low. Jute is the product of two species of *Corchorus*, *C. capsularis* and *C. olitorius*, and can be raised in the Southern States wherever there is a hot, damp climate and a moist soil of sandy clay or alluvial mold. The prepared fiber is used in the manufacture of gunny bags, baling stuff, sacking, burlaps, &c.

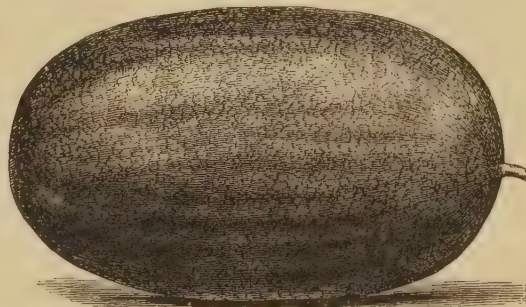
THE MARLBORO RASPBERRY.

This new candidate for public favor as the most valuable variety for market culture is now before the public, being offered for sale by its originator, Mr. A. J. CAYWOOD, who is well known for the many fine varieties of fruit he has produced. The plants are claimed to be vigorous, hardy, and extremely prolific; the fruit of large size, firm, excellent quality, a bright scarlet color, and the earliest berry known.

VICK'S EARLY WATERMELON.

Will you please describe the above Melon? Last spring I received seeds under the above name from a source that ought to be reliable. They grew well, and produced some fine Melons, one of which would have weighed nearly twenty-five pounds; but the quality was such that I doubt its being the genuine Vick's Early. If it is, then this Melon does not deserve the name it bears. The fruit is one foot long, eight inches in cross diameter, and of equal size at each end. Green ground with yellowish stripes. Is this correct?—S. MILLER, *Bluffton, Mo.*

Vick's Early Watermelon is of medium size, usually less than foot in length, ob-



long, smooth, very dark green, not striped. Flesh bright pink, very solid and sweet; seeds black. An excellent and early variety. The accompanying engraving represents it as well as can be, as it was made from a photograph. The color is uniform over the whole surface.

SEEDS THIS MONTH.

It is well to sow seed this month of the Verbena and Pansy, if not already in. If plants of *Centaurea gymnocarpa* and *C. candidissima*, and *Cineraria maritima* are wanted for edgings, this is the best month to sow the seed. Sow in shallow boxes in a warm place in the house, and when the plants have made a few leaves, transplant them into other boxes, giving plenty of room to develop.

SNOWBALL INSECT

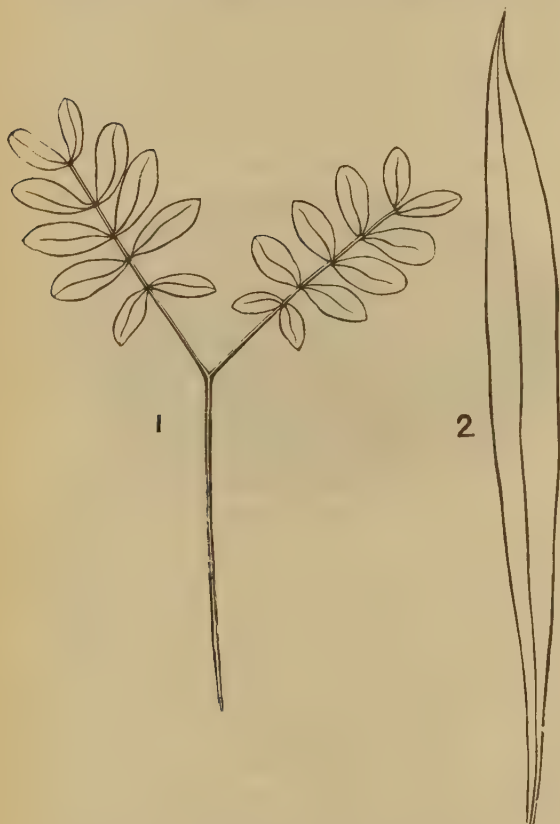
I would like to ask if there is any remedy for the insect enemy of the Snowball. I have had perfect flowers only two or three seasons in fifteen.—M. A. W., *Grand Crossing, Ill.*

We shall be pleased to publish anything on this subject that any of our readers can communicate in relation to it.

A PROLIFIC YIELD.—I received from you, last season, one pound of the Rochester Favorite Potato, and from it I raised, without manure or any kind of fertilizer, two even bushel baskets full of fine Potatoes. Chicago Market did equally well.—F. G., *Fremont, Ohio.*

AUSTRALIAN SEEDS.

The Australian seeds you sent me did not come up, except the *Acacia cyanophylla*. I planted the seeds in pots and kept them in a room where the thermometer ranged from 87° to 100° day and night; perhaps they needed bottom heat. I planted eleven seeds of the *Acacia* and had nine plants; insects de-



ACACIA CYANOPHYLLA. LEAF AND PHYLLODE.

stroyed them all except one, and it is a great curiosity to all who have seen it. I send you two pressed leaves taken from the plant; it had seven leaves like No. 1, No. 2 is the eighth leaf, it has four more like it, only much longer. Both kinds of leaves come out from the stem alternately. The leaves like No. 1 stand with the flat surface up, as those of any other plant, but those like No. 2 present one edge upwards and one downwards, which gives the plants the oddest appearance imaginable. I cannot keep it in the wind, for the top whirls around at such a rate I fear it will twist off. Is such a strange growth natural, or is it a freak of nature? Please give your opinion, and, if possible, say to what plant the leaf No. 2 belongs, with a description. I would like to know if it blooms, and what the flower is like. Every one who sees the plant asks me if I did not bud or graft it. Could plants so different be grafted on each other? I think not.—S. T., Abbeville, La.

Most of the Australian *Acacias* exhibit a wonderfully strange peculiarity in their foliage, and the case here mentioned is a fine example of it. The *Acacia* belongs to the Pulse, or Pea family of plants, the Leguminosæ. One characteristic feature of the plants of this family, exhibited by nearly all the members of it, is its style of

leaves. These are compound, being composed of few or many leaflets, the leaflets, also, are frequently divided, thus the leaves are described as pinnate, bipinnate or tripinnate. The hardy *Acacias* cultivated for ornament in this country have such leaves. Some species of the Australian *Acacias* have leaves of this kind, or like the representation No. 1, but most of them are furnished with foliage of which the shape of the individuals is similar to figure 2.

These organs are not true leaves. In the instance before us seven perfect leaves were successively formed as the plant grew, but afterwards, at the regular places along the stem where we should expect the leaves to appear there grew organs leaf-like in form and appearance, and performing the functions of leaves, but differing from them in the fact that their surfaces have a vertical position,



ACACIA HETEROPHYLLA. LEAF WITH DILATED PETIOLE.

and not like leaves presenting one surface toward the earth and the other towards the sky; one edge is upwards and one downwards. The fact is, that in this case, after the seventh, the leaves were entirely suppressed, and these leaf-like organs, which are merely the leaf-stems or petioles expanded into

leaf form, supplied their places and now perform the functions of the leaves. These organs are scientifically known as phyllodes. The word, phyllode, means leaf-like, or leaf form. One species of *Acacia*, *A. heterophylla*, shown at figure 3, has its petiole thus expanded, while at the same time it bears at its extremity the fully developed compound leaf-blade.

There are examples in other plants of this strange expansion of the leaf-blade, but these cannot now be examined. Like all the plants of the Pulse family, the *Acacias* bear flowers of the shape of Pea blossoms. Perhaps, if Mr. GUILFOYLE should notice these pages, he may oblige our readers by giving more information in regard to these transformations of the foliage of the *Acacias*, which must be familiar to him in all their details.

PRIZE ONION ESSAY.

In this number will be found the essay on Onions which received the prize—that of W. ABELL, Linesville, Pa. At the same time we publish one of the competing essays by P. C., Sigourney, Iowa, as it contains some good points not so fully stated in the prize essay, especially in regard to the use of implements. The committee making the decision in regard to the essays was a thoroughly competent one, and possessed practically of a knowledge of all the most modern methods and appliances in the cultivation of this crop. In the report of the examination it is stated that none of the essayists fully covered the subject, and all of them could be fairly criticized on some points. In regard to the prize essay the main objections are that, in the first place, it recommends sowing in rows thirteen inches apart, which experience shows to be too close; fifteen to eighteen inches being better for field culture. Secondly, it names two and a half pounds of seed as sufficient for an acre. To use so small a quantity the ground must be very well prepared, and the seed very evenly sowed and covered; in fact, the work must be done very much better than it usually is. Three and a half to four pounds of seed is as little as it is safe to advise; one of the essayists says four to five pounds. The illustration of the little Onion weeder is represented left handed, whereas it should be reversed, the handle being on the end at the right hand.

HOW TO TREAT SOME PLANTS.

A friend gave me what she called *Amaryllis Treatiæ*. She had had it two years; it did not bloom, and she wanted me to try and make it bloom, and the first thing I do will be to ask for information about the treatment of it.

Please tell me about the *Agapanthus*. I have one in a ten-inch pot; it has two crowns and about thirty-five or forty leaves, more than two feet long, but it does not bloom.

The *Bouvardia* you sent me has grown two feet high, but the leaves dry up and drop off till the stem is bare half its length. Since the *MAGAZINE* told me how to treat my Wax Plant, *Hoya*, I have had abundance of bloom.—M. J. G.

Bulbs of Treat's Zephyr Flower in ordinary potting soil up to the neck can be watered and started into growth at this time or later. Do not give them much heat, but bring them along gradually, increasing the heat a little as the season advances. Water sparingly at first, but increase the amount as the foliage demands it. When growth is well started give full benefit of the light.

The best time to have shifted the *Agapanthus* was last fall; if done at that time it will be ready to commence growth in a few weeks. If that operation was not then performed the plant can now be turned out of the pot, some of the soil carefully removed, and again be potted with some new, rich soil; water moderately. In a few weeks the young roots will begin to push toward the sides of the pot, and the plant will commence its growth, when it should be given all the water it can use. This plant requires to become large and strong before it blooms.

The *Bouvardia* has probably been kept in too dry an atmosphere.

GARDENING FOLLIES.

One of our appreciative readers remarks in a private letter that "the *MAGAZINE* is doing good service in the community, and all are commencing to pay more attention to their home grounds and door-yards. Within the last few years there has been a wonderful improvement in this respect. But why do people place upon their grounds such ridiculous affairs as the so-called gipsy camp kettles, and plant Castor Oil Beans in rustic baskets?"

We have already shown up the iron kettle affectation, and no one of good taste will practice either of the absurdities our correspondent notices; but a bad example will always be copied.

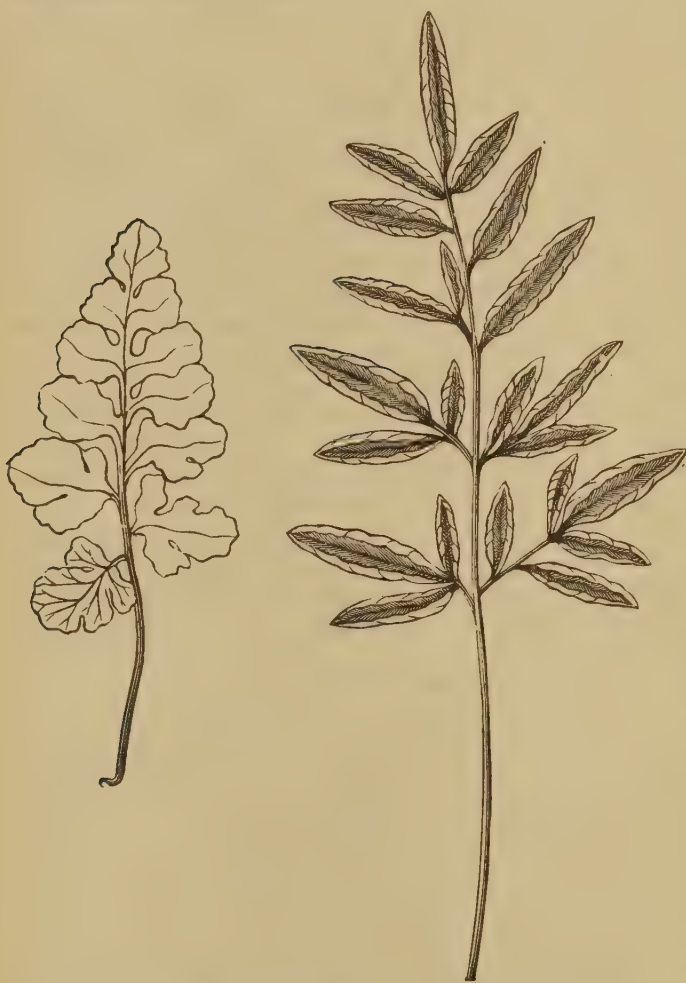
NATIVE FERNS.

Under the generic name of *Pellæa* are grouped together a dozen or more of the native Ferns of this country. The arrangement of the sori in this genus is nearly the same as in *Cheilanthes*, and with this feature only in view it would probably be impossible to draw a dividing line between the two genera. But in *Cheilanthes* we find the fronds hairy and

tween the two genera. Unfortunately it is very rare, it being many years since it was collected. It is a native of Texas and New Mexico. It would be an affair worth recording if some of our readers in that part of the country should be so fortunate as to find it. The sporangia in this genus are borne on the upper parts of the free veinlets, and as they increase in size they become confluent, forming a continuous line, which is covered

by the reflexed margin of the segment of the pinnule. Our illustration shows a fertile and a sterile frond, natural size, from a specimen of *Pellæa gracilis*, obtained from Vermont. The plant usually grows from three to six inches in height, with its fronds in a little cluster; these are thin and delicate in texture, with three to five divisions on each side, our illustration shows five pairs and a terminal one; the lower ones are seen to be divided or lobed. The fertile fronds have the stipes some longer than the sterile ones, and the divisions are greatly contracted, causing them to assume quite a different shape, being narrowly ovate, or even lanceolate.

The stipes are very delicate, a brownish straw color, and a little darker at the base and very sparingly chaffy. Most species of *Pellæas* have dark, smooth and polished stems, and from this circumstance they have been named, from the Greek



PELLÆA GRACILIS. STERILE AND FERTILE FROND.

often woolly, while those of *Pellæa* are smooth and often glaucous, thus making the family distinction quite apparent, especially to the trained eye. That the character of the surface of the frond, whether smooth or hairy, is the decisive feature in determining these genera will be still more apparent when we state that *Pellæa aspera*, of BAKER, which has its upper surface covered with short whitish hairs, and its under surface so to some extent, is referred to the genus *Cheilanthes* by Sir W. J. HOOKER. Evidently this species is the connecting link be-

word, *pellos*, dusky. *Pellæa gracilis* is a rare Fern, though distributed over a wide range. It grows in deep glens in the crevices of damp and shaded rocks, and has been found from Labrador to British Columbia, and in some of the Eastern, Middle, and Western States. This beautiful little Fern is seldom cultivated, as its requirements are such as to make it impatient of the gardener's attentions.

Only one other species, *P. atropurpurea*, is found in the older States, but California is the favored home of quite a number of beautiful forms.

THE POTATO ROT.

Our readers have already been informed in regard to the Jensenian method of Potato culture for the prevention of rot. In order to have additional accurate tests in regard to the value of this method, Mr. CHARLES B. PLOWRIGHT, of King's Lynn, England, instituted, last season, a number of experiments, a report of the results of which was read in December last before the scientific committee of the Royal Horticultural Society. It has been held impossible for Potatoes to become diseased by direct contact of the tubers with the fungus spores. To subject this opinion to a practical test, Mr. P. took some recently dug and presumably sound tubers, and dashed against them some diseased tops or branches to infect them, if possible. The tubers were then placed in the earth and examined after eight days. An equal number of tubers taken from the same root or hill and not having been in contact with a diseased branch were at the same time buried, in order to compare with the others. These Potatoes were of three varieties, but in three lots. On taking them up their condition was as follows: Four tubers of Porter's Excelsior which had been infected were found diseased, and of the four not infected one was diseased. Another lot of six tubers of the same variety which had been infected were found to be all diseased, but the other six from the same root were not diseased. Three tubers of the Beauty of Hebron which had been infected were found diseased.

Mr. P. states that Porter's Excelsior is a Potato which takes the disease very readily, so that the control (or comparison) tuber which became diseased was, doubtless, affected before it was buried. Care was taken that the tubers were free from any abrasion of the cuticle, or injury by which the disease could have entered the substance of the tubers without penetrating the skin. The control tubers were kept several weeks, but evinced no signs of disease.

As a practical and careful test of high-molding, or earthing up, which is the essential feature of JENSEN'S method of protection, equal numbers of plants of the same varieties were high-molded, and molded, or earthed up, in the ordinary manner. Without describing all the pro-

cesses of the tests which were very carefully performed, we reach the result, as follows: Porter's Excelsior, with high molding, had no diseased tubers; but with ordinary molding ten per cent. of them were diseased. Elephant, with high molding, none were diseased; with ordinary molding twenty per cent. were diseased. Ash Leaf, with high molding, none diseased; with ordinary molding twenty-five per cent. diseased. American Rose, high-molded, had one per cent. diseased; with ordinary molding seventeen per cent. diseased. These results afford high proof of the value of the high-molding method. "But," says Mr. P., "if high molding be the true cause of this freedom from disease, it should compare more favorably still with plants that have not been molded at all." To ascertain the facts in this respect an equal number of plants were high-molded and left without molding. When dug, the plants left without molding produced fifty-four sound tubers, and sixty-five diseased tubers, and those high-molded one hundred and seven sound tubers and none diseased. The value of the new method of cultivation, as a protection from rot, is evidently fully confirmed by these experiments.

WINNOWNED AND SCREENED.

A writer, B. F. J., in the *Cultivator and Country Gentleman*, offers some very good reasons for thinking that many orchards planted on high grounds at the west are failing because of a lack of water in the first place, and secondly, the want of potash and phosphate of lime in the soil. Is any method of irrigation for them practicable?

EXPERIMENTER, in the last number of the *Gardener's Monthly*, states that for a few years past he has succeeded in raising Potatoes in a shorter time by first inducing them to sprout before planting. "A few weeks before planting time," he says, "I select my seed Potatoes, and set them in a warm place to sprout. By the time my ground is ready the shoots are about three inches in length. The Potatoes are handled carefully, so as not to break the growth, and cut up in suitable size as in the ordinary way. One strong shoot is left to each piece. The sets must be put into the ground care-

fully, of course, or the shoots will be broken off. As growth commences at once, the green tops show in a few days. There is easily a saving of two weeks time at the start." For the purpose of raising a very early supply in the garden, this method is probably an excellent one.

At the late annual meeting of the Ohio State Horticultural Society, the Rev. A. C. BARROWS presented his ideas on "Bug Life in the Garden," and gave as his remedy for bugs, insects and flies by day, by night, and at all times, as an emulsion of coal oil and sour milk, diluted with water and syringed over the plants infested with them, and afterwards syringed with pure water. This method of treatment is one which for several years we have advised our readers, and our accumulating experience is proving its unfailing value.

The following method of preserving wooden posts in the ground is said to have been well tested, and one who describes it from experience, says: "Take boiled linseed oil and stir in pulverized coal to the consistency of paint. Put a coat of this over the timber, and there is not a man who will live to see it rot.

In a late number of the *Rural New-Yorker*, Q. says: "Mr. LOVETT, in the January number of an agricultural contemporary, mentions a rather new observation—that the fruit of one and the same variety of pistillate Strawberries may assume a totally different character as to size, shape, color, firmness, etc., according to the variety which impregnates the blossoms by its pollen. Some time since, being in tidewater Virginia, where Strawberries are grown quite extensively for northern markets, I had occasion to talk with some of the most successful cultivators, and very observing northern men, too, on this very subject. From their statements it appears that in that section the very best results in the cultivation of the Strawberry are obtained from the Crescent, fertilized by the Wilson. I found these men to be well acquainted with that fundamental principle of reproduction, which assigns as much influence upon the progeny to the male as to the female parent; and they had used this knowledge in the selection of the male

parent best suited to their purpose. They needed productiveness, and above all, firmness and keeping quality, and the Wilson imparts these characteristics.

"These men at the same time lay much stress on the necessity of providing for an abundance of pollen, and therefore alternate the two varieties; that is, plant one row of Crescent and one of Wilson. The results obtained with this combination are highly satisfactory, and have not been outdone in experiments with the Manchester, James Vick and other new sorts. The majority of Strawberry growers deny their beds of pistillates the chances of perfect fructification. I have often made the same mistakes in the supposition that to have a pollen variety somewhere in the vicinity would be quite near enough. Let us provide plenty of pollen and thus secure a full crop. Trials made near Richmond, Va., with the James Vick, have shown this berry to be of medium size, handsome in shape, deep red in color, and of good flavor. It is remarkable as a keeper. A basket of this variety, after standing four days, was to all appearance as good as when freshly picked."

AUSTRALIAN SEEDS.

I hardly like to tell you what poor success I have had with those Australian seeds you sent me last summer. I planted a few of each kind in a box in light soil, and covered it with glass. The *Solanum laciniatum* grew readily, but nothing else. I have planted seed twice, with like results. The *Solanum* is a peculiar looking plant, with a dark purple stem and deeply cut leaves, and quite liable to be troubled with aphid and red spider. But a free use of insect powder with a slight mixture of sulphur discourages both insects greatly, while a light shower bath every morning keeps all my plants looking fresh and clean. I would like to hear the experience of others with those seeds. —MRS. B. B.

UNHEALTHY GERANIUM.

I send you a leaf; please say what you think it is. Why does my Geranium form buds which turn yellow without blooming?—MRS. M.

The leaf you send cannot be determined. Your Geranium is unhealthy, but from what cause we have no means of knowing.

A GARDEN JOURNAL.

We present to our readers at this time, and expect to continue from month to month during the year, a record of the actual operations of a practical gardener, Mr. RICHARD GAMBLE, during the past year, at a suburban place near our own, of about three acres, with lawn, fruit and kitchen garden, greenhouse and cold grapery. Some of our readers will probably recognize the writer of this record as the author of valuable communications which have appeared in our pages at different times.

The record is not a suppositional one in any line or remark, but relates faithfully what was performed. It can scarcely fail to be valuable to some extent as a guide, or a warning, to inexperienced and amateur gardeners. The operations can be repeated by others through a wide belt of country at nearly the same times, but all will perceive that in this particular they can be discriminately adjusted to every locality.

February 1. Potted off rooted cuttings of Chrysanthemums that are intended to make plants for next winter's bloom. Also, potted little plants of *Stevia variegata*, to be used in summer for edging borders of flower beds.

2. Potted off Mrs. Pollock, Happy Thought, and a general collection of double Geraniums for bedding out.

3. Put in a large number of Coleus cuttings, intended for summer bedding.

5. Potted off Carnations and a variety of other small plants, some for bedding and others for blooming in pots next winter.

6. The same.

7. The same.

8. Potted off *Centaurea gymnocarpa*.

9. Putting in cuttings of Ivy-leaved Geraniums, Ice Plant or *Mesembryanthemum crystallinum*, and *Vinca major variegata*, for future use in vases and hanging baskets.

10. Put in cuttings of *Stevia serrata* and Lemon Verbena.

12. To-day, I have been shifting some plants into large pots and removing decaying leaves, and have also repotted some plants that were becoming pot-bound.

13. The same.

14. Putting in cuttings of Heliotrope, intended for summer bedding.

15. Sowed Tomato seed in boxes in the

greenhouse, in order to get early plants in spring. Sowed Egg Plant seed in pots; also, Cucumber seeds in pots to make strong plants to put in hot-bed in March.

16. Potting Chicory roots in large pots to force the leaves for use as salad. The pots now filled with Chicory roots are placed in the cellar in a dark, warm corner where they will blanch nicely.

17. Putting Grape cuttings into propagating bed. Also, repotting Fuchsias intended for spring and summer bloom.

19. Finished repotting Fuchsias, to-day.

20. Potting off Coleus that were placed in the propagating bed on the 3d inst.

21. Put in more Coleus cuttings to strike. Sowed Early Tennis Ball Lettuce in boxes in the greenhouse, to be transplanted into the hot-bed in March.

22. Pruning hardy Grape vines to-day for the first time this winter. The weather to this time has been cold and stormy.

23. Sowed in large flower pots seed of Early Wakefield Cabbage, and Early Snowball Cauliflower in the greenhouse.

24. Pruning out of doors.

26. Shaking out of the pots some fancy Caladiums, and repotting them.

27. Staking up and tying Fuchsias.

28. The same.

RHODODENDRONS AND KALMIAS.

In the November number of the MAGAZINE, you request information in regard to the Rhododendrons and Mountain Laurel, *Kalmia latifolia*, and some other plants.

From the window where I write, I can see a steep bluff, by a brook, covered with both plants, and also with the "Mountain Honeysuckle;" what the botanical name is of the last one I am not certain, botanists have called it a true *Lonicera*, others call it an Azalea. Many years ago it had still another name then generally adopted, but I cannot recall the name. The Kalmias and Honeysuckles grow wild in great profusion all over the mountains of Tennessee, Georgia and Alabama, often in the most barren places amongst the rocks. Then, again, we see them on the creeks and rivers, with their roots often in the water; in these places the *Kalmia* grows much larger than on the mountain, in one instance I have seen them not less than fifteen feet high, and about eight or ten inches in diameter near the ground. Both plants are fre-

quently found growing also in the valleys, but much less common.

The Rhododendron grows mostly on the mountain sides in steep places, often difficult of access; these mountain sides are generally much richer in soil than the plains of the mountain tops, having been enriched by the decomposing rocks and the washing of the soil from above.

The Honeysuckles are shrubs, not vines, some are white, some red and white, others of a brick red; some are very fragrant, others not, some bloom quite early, others not until June. They are all very showy, but the odor of the fragrant ones when they grow in masses is quite oppressive and overpowering. I have felt quite relieved when I have got away from them on a still morning in the spring.

It has always been considered difficult to move any of these three plants away from their native habitat. I have seen a great many failures; some claim to have succeeded by removing also a large quantity of the soil in which they grew, and planting in that. I live here in a high valley between the Lookout Mountains, and these plants all grow here, but more abundantly on the mountain and its sides.

I can see no reason why they should not grow in Missouri, so far as climate is concerned; but the soil may not suit them, and possibly the winter is too cold for the Rhododendron, but I think not, as I have seen it growing much further north.—J. T. N., *Rising Fawn, Ga.*

LIGHT AND HEAVY SOILS.

It is not easy to decide which gives the occupier the most advantage, a light soil or a heavy one. No doubt, the happy medium is best in this as in other things, and that a fine loam, compact, yet friable, and free from any poisonous element or stagnant wet, is worth more than any ordinary price that is ever paid for naked land. Light soil affords the great advantage of being easily worked at almost any time, but it requires continual feeding almost day by day, having little power of storing or keeping plant food, or even the necessary moisture. On the other hand the heavy soil is difficult to work; it must be taken just between wind and water, for it is readily spoiled for plant growth if the plow is put into it till almost dry; yet it can scarcely be worked

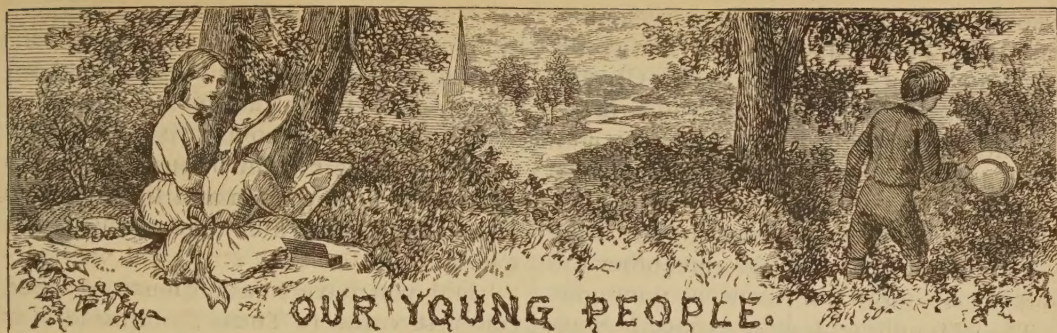
at all when quite dry. But it compensates for this by its eminent power of retaining plant food and moisture, and even of absorbing them from the air. Its compactness renders it much less inviting to insects than more open and light ground is, and that is a chief reason why those who understand such soils, and are careful in applying their experience of them, raise the surest and the heaviest of crops.

It is not only hurtful to bring up the sub-clay on heavy soil, but it is hurtful to turn up the heavy soil itself more than a spade's depth, unless a great amount of material can be worked in to keep it permanently open and friable. Double digging may be good for some light, hungry soils, but for heavy ones it is different. It can be seen, any season, when such soils are merely scratched four or five inches deep with a plow, in suitable weather and with a share of manure or lime, that the results at least equal those which succeed steam cultivation and special manuring on similar soils. Such soils require peculiar and careful management, and a successful cultivator on medium loam may lose his credentials if he tries either light or heavy soil. The latter should usually be broken roughly in the autumn, as soon as crops are off, and may be limed then, if necessary; but manure, decayed, not heated, is applied only when it is forked over in the spring. Burnt clay and wood ashes are especially stimulating on such soils, and they improve their texture.—W.

FLOWERS AT THE SCHOOLS.

The South Renfrew Agricultural Society, of Ontario, takes up the idea of encouraging the cultivation of flowers and ornamental plants in the school grounds, and through one of its members offers a prize to be awarded to the school making the best display of flowers at the annual exhibition in September next. A second prize has also been offered by one who desires to help the good work. Which will be the next society to move in this matter?

LUCK WITH PLANTS.—My friends say, "What luck you always have with plants!" I know it is success won by the love of them, experience, perseverance and reading.—R. R.



ASKING QUESTIONS.

"Please tell us a story, Aunt Helen," teased Claude Morton and his sisters Annette and Grace, as they sat at twilight on the broad gallery of their Texas home.

For answer, she inquired, "Did not I hear you tell Fred. King, the other day, that 'Aunt Helen is just made up of stories?'"

"I suppose you did; for I remember of having said so," and he looked curiously at his aunt in sidewise fashion.

"Well, I want you to know that the stories of the kind I have been telling you have entirely run out—the stock is exhausted. I have no more fairies, or ogres, or brownies, or dwarfs, or hobgoblins, or impossible giants, or still more impossible princes and princesses to tell you of. If ever you needed any thing of the sort for your young imaginations to revel in, you've had enough of it now, though no doubt you'll continue to find fresh supplies in story books."

"Do you mean, Aunt Helen," inquired Annette, with wo-begone face and doleful voice, "that you'll tell us no more stories?"

"'Cause," added Gracie, "Mamma says she wouldn't know what to do with us chil'ern sometimes if it wasn't for your stories."

"Indeed! and so you overheard that, did you? O, yes, I shall continue to tell you stories as often as heretofore, if you wish it; but they will be about real folks and real incidents, and perhaps you won't like them."

"Yes, we shall like true stories," said Claude, "but when we know they're just 'made up,' of course, we want real stunners. In a true story just any little thing that happens out of common seems wonderful, because we know it's true; but in a 'made up' story you can't put things

too strong to suit us. The surprise of it sort of makes up for its not being true, you know."

"Well," said Aunt Helen, "this is my birthday, you remember, and I have been thinking all day about your papa's home, away in Vermont, when he was a young man, and I was a little girl. It was in a cozy village, where we could see the always-green mountains, which gave to the State its name, ver, meaning green, and mont, mountain. You have heard of the 'foot' of a mountain? well, it seemed that those mountains had tucked up their feet to give as much room as possible for our pretty meadows and hill slopes to sun themselves in, and every June they were red with wild Strawberries, and on my birthday I always gathered the first ripe ones, so that the two are associated in my mind; and so, all day, I have been thinking 'Now, the Strawberries are beginning to ripen in the meadows of my childhood, since which time none have ever tasted so sweet.'

"It was in that cottage home that I mourned nearly all one summer and autumn because the only flowers I had tried to raise, Nasturtiums, would not climb like those of our neighbor's. The leaves and blossoms were the same, for I had compared them closely. But twine around the cords I so carefully arranged for them, they would not. They seemed, instead, to delight in growing as squatty as possible. I supposed the fault was all my own, and was too mortified to mention the subject, while those in the next yard were a perpetual reproach. So, one dusky twilight, I took down the cords, and, going to the kitchen, tossed them to the housekeeper, saying, 'I wish somebody would pull up my flowers.' Next evening, when I came home from school, sure enough they were gone, and

I soon learned, with great satisfaction, that their seed-capsules and leaf-stems were safely resting in a pickle jar. Claude, don't you find this sort of story rather dry?"

"Not so very; I'd like to know why your plants didn't climb, if they were made to."

"Why, bless your heart, boy, they weren't made to! Do you remember the Bush Beans and Pole Beans in your garden? well, after a long time, I accidentally learned that Nasturtiums have different habits of growth, like Beans."

"But, Auntie," asked Claude, "what makes them grow differently when they seem to be alike every other way?"

"Ah, yes, what makes them, indeed! You commence now and study into that matter until you are a man, and then tell people what you have found out about it."

"But, Aunt Helen," inquired Annette, "how does the little Bean, down in the ground, know which kind it is, and which way it ought to grow?"

"My darling! That is just what I wanted you to think of yourself. But I can't tell you, dear, how it finds out whether it is to grow toward the sky, or stay low down near the ground."

"I think I know," said Gracie, leaving her seat and drawing her aunt's head closely down, so that no one should hear, while Claude winked very knowingly at Annette, "I think their Heavenly Father just whispers to the Beans, away down in the dark, and tells them which way to grow, so they will make no mistakes."

"My precious child!" said aunt Helen, kissing her, "I am sure I never heard a better reason."

"What is it?" asked Claude, as the modest Gracie, with downcast eyes, took her seat.

"Never mind, now; by-and-bye, I will write it for you on a slip of paper, and you and Annette may each write an answer of your own, if you will. And now, what have you learned from my summer's mortification over those Nasturtiums?"

Claude and Annette both exclaimed, "We've learned that some plants that look alike grow different ways," and Gracie chimed in "— different ways."

"Yes, but there is something else for you to remember from my doleful trouble, and that is, not to be too sensitive about asking questions, when —"

"Mamma says I ask too many questions," interrupted Gracie.

"Yes, we know, dear," resumed Aunt Helen, "but you, Claude and Annette, understand what I mean. It is charming to find out things for yourselves; but when you can't, ask some one whom you think knows, and don't be as foolish as I was."

"Did you have to ask questions when you first came to Texas?" inquired Annette.

"Indeed, I did, and commenced before getting inside the State. First, about the red soil, so red that a great river takes its color and its name from it. A lovely Texas lady, Mrs. Sarah Sterne, of Palestine, whom we met on the cars, told us that in some places the soil would leave stains on carpets and clothing, like iron rust; and your mamma and I wanted to stop and take the next train back home."

"But you didn't, did you?" said Gracie, and then Claude said,

"Don't you like Texas, now, Aunt Helen?"

"Yes, indeed," she answered, "for if people don't like the rich, red soil, which is so good for Corn, they can choose the clean, light colored soil, called cotton land, like this we have here. But you have certainly noticed, Claude, that every stone around here, from the pebbles to the rocks, even your back door step, are red, like the red soil we were speaking of, and so, of course, they were never formed here."

"O, Aunt Helen, how then did they get here?"

"I can't tell you. We shall have to learn what some wise geologist thinks about it. It is likely that the Gulf of Mexico once washed over this land, and farther back the ocean itself may have covered the country, and these strange looking rocks may have been left here by the wash of mighty waters, or by the melting of mighty glaciers, which had formed elsewhere, and frozen them fast in their icy clutches, and then taking a sail or a slide, finally melted in this region and dropped them."

"O, how strange!" said Claude, "I wish it were morning so I could go out and take a good look at some of the stones and pebbles."

"Don't you think they'll look the same to-morrow as they did to-day?"

"They'll never look the same to me again."

"Well, I'm glad you feel an interest in that direction, though I hardly see how I got upon the subject, for I was intending to go on and say, that after getting fairly within the State that was to be our future home, I was continually asking questions, not about things, Gracie, dear, that I should know directly by keeping quiet and simply using my eyes and ears, but about certain things that I had never seen before in their native home, and many other things that I had never seen at all."

flowers, flowers all over, except where crowded out by land cultivation."

"Aunt Helen," said Gracie, half asleep, "don't anything—anything grow—grow in Vermont—'cept Strawberries and—and mountains?"

"You blessed child," said Aunt Helen, laughing, "trying to keep pace with our talk were you, till you're just asleep. And now comes mamma with her question, asking if it is not time for the sand man to be around, and so the story I was really going to tell will have to wait till next time, though I can't see how ever it slipped out of my talk."—AUNT MARJORIE.



"Tell us what they were, Auntie, please," said Annette.

"I cannot name all; but among the first that interested me were the hanging Moss, the Mistletoe, the Cacti, the Fig trees, the Palmettos, the Mocking Birds, the Tarantulas, the green Beetles, the petrified trees, (those you know of,) the fields of Cotton, the Live Oaks, the China trees, the Gum trees, the Buckeye shrubs with scarlet blossoms, the wild Coffee shrubs, the evergreen Laurel, the scrub Holly, the wild Honeysuckles, the door yards without grass to set off the blooming beds and borders, and a whole country without Clover any where; but

THE WREN AND HIS HOME.

Quaint little birds are the Wrens, dressed in their brown feather jackets, and flitting hither and thither in their brisk, busy way from twig to twig of the bushes, or searching beneath them for the worms or insects on which they delight to feed.

They are small birds, with long, slender legs, and their plumage is of a red brown color, somewhat streaked or mottled with dark brown. The under part of the body is a light color, nearly approaching white, and on the tips of the wings small, bead-like spots of white.

Their wings are not long, and instead

of flying continuously, they flit and jump from branch to branch of the bushes.

The song of the male bird is sweet and clear, but he is very pugnacious, and will defend his rights whenever occasion requires, even though he may be obliged to fight larger birds than himself at such times.

The nests are made of hay or moss, lined with feathers and covered with a roof; the opening is at the side.

To prevent its being discovered, the birds select for the outside of the nest material resembling in color the object against which it is to be built, and always choose some spot where it will be sheltered from storms. Under the eaves of a house, or beneath the projecting ledge of a wall or bank. They will also gladly take possession of the little bird houses which may be prepared for them or others of the feathered tribe, and consider such quarters very luxurious. Still they are quite content with the homes they so skilfully prepare for themselves.

One species, called the Winter Wren is quite numerous, and may be found in the cold climates of Labrador, and thence to the far south. Another is called the House Wren, and he loves to make his home near dwelling houses, and renders himself a truly welcome neighbor because of his musical song.

When the winter is very severe, a number of Wrens will form themselves into a company, and take possession of a bird house, or an old nest, and there make themselves as comfortable as possible until the intense cold is gone.

There are many varieties of these little birds besides those already mentioned, such as the Common Wren, and Marsh Wren, and they are all very interesting little creatures to study, and as they sing their sweet songs in coldest winter weather as well as through the summer, they have unlimited power of giving pleasure.—M. E. WHITTEMORE, *New York*.



MICROSCOPICAL JOURNAL.—Announcement was made in the November number of the 'American Microscopical Journal' that the publication would cease with the close of the year. The editor, Mr. ROMYN HITCHCOCK has issued a card informing the

public that this notice was given without his knowledge, and that with the January number he will resume its publication. Subscribers are requested to renew their orders at an early date. This journal has done much service in the dissemination of scientific knowledge, and horticulture and botany have received especial benefit. We trust it may have a liberal support. The yearly subscription is one dollar if ordered by April first, and after that time one dollar and a half. Orders can be sent to R. HITCHCOCK, P. O. Box 630, Washington, D. C.

SPEECH AND MANNERS.—The name of this book is a very correct index to its contents; but it is entirely different from any other on the same subject in the manner of presenting them. And this manner is a most fascinating one. A matron and teacher, the members of her family, and her pupils form themselves into a society for the promotion of speaking good English, and in pleasant conversations notice many common grammatical errors, and infelicities of speech. The book cannot fail to interest all young people who desire to speak our language properly. We commend it to parents and teachers. The writer of it is Miss E. S. Kirkland, the author of the "Short History of France," and other works, and it is published by JANSEN, MCCLURG & Co., of Chicago, Illinois, at the price of one dollar.

ENTOMOLOGY.—Professor C. V. RILEY will please accept our thanks for a copy of Bulletin No. 3 of the U. S. Department of Agriculture, Division of Entomology, being his reports of observation and experiments in the practical work of the Division, and containing Further Notes on the Army Worm, Experiments with Pyrethrum, Notes on Forest-tree Insects, The Cotton Worm in South Texas, Test of Machinery for Destroying the Cotton Worm, The Tree Borers of the Family Cossidae, and Test of Silk Fiber from Cocoons, raised at the Department.

ROUND ABOUT RIO.—This book by FRANK D. G. CARPENTER is humorous and gives some vivid sketches of life in the capital city of Brazil. On the whole the writer's attempt to produce an effect on the reader is too continuously apparent. Many of the impressions conveyed are undoubtedly correct, but some accounts are evidently overdrawn. While the book affords amusement it is not entirely satisfying by its information. Published by JANSEN, MCCLURG & Co., Chicago, Illinois. Two dollars.

APPLETON'S HOME BOOKS.—The ten little volumes of this series can be recommended for their valuable advice and suggestions on most of the questions that arise in connection with building and furnishing a residence, and the improvement of the surrounding grounds. The books are sold together or separately at 60 cents a volume. Address, D. APPLETON & Co., New York.

WORCESTER COUNTY.—The Transactions of the Worcester Co. (Mass.) Horticultural Society for 1883, with the Premium schedule for 1884, has made its appearance on our table. We must notice, as we have in former years, that this is one of the live societies of the country, holding up a high standard for the attainment of horticulturists.

The Publisher of *The Leader and Illustrated Australian News* will please accept thanks for November issues of those journals. The *Leader* is a mine of news and intelligence, and the *Illustrated News* is wonderfully attractive with its well wrought pictures.

LINN COUNTY FAIR.—The Twenty-fifth Annual Fair of the Linn County Agricultural and Mechanical Society, will be held on the Fair Grounds at Cedar Rapids, Iowa, September 9th, 10th, 11th and 12th, 1884.